written by

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Alone y: we can explain the Pain
w: is felt sooner & more in y
Head in Fever than in Other parts viz:
from y Blood: rushing more impetuously
into it on y Acc: of its direct situation to y: Heart.
2: upon the Differnt states of y Blood
in the circulating System, so that if
One parts Obstructed. the Blood will run
w: greater velocity in Others.
3: upon a Stimulus applied to particular
parts or relaxing powers applied to
them. this finishes what I had to say
upon the Doctrine of proximate Causes.
the Remote Causes or potentia nocuæ
ought to come next, but I shall pass
them over here as they will come in better in y:
Methodus Medendi.

we come then to treat of the III part of our Pathology viz: of Symptoms. For a Definition of Symptom recourse w: was said formerly. They have been divided into several Classes, but we shall reduce them all to w: are called "Actiones Læsæ" and then I shall consider on a general plan. I shall in treating upon these Actions follow the ordinary Division of the Functions in 1 Vital 2 Natural & 3: Animal

The vital are those w are more Essentially necessary to Life, & w out w: Life cannot subsist.

The natural are necessary to y Support of Life but not so much so as y vital. they

are employed in supporting the Form & Fabric of the body.

The Animal are those Functions w^ch: Animals have, wch dispose them to act on bodies & to be acted on by them. or in other words they are the Organs of Sense & motion & are common to all Animals as well as man. —

we shall begin w^th: the last, & 1st: we shall treat of the Symptoms of Sense, or of morbid Sensations. the first & chief of these is Pain & Anxiety. these are ye most general & important of any of the Path^l: we shall begin w^th: the first. —

Pain. this is a simple sensation &

therefore cannot be defined. Our sensations
: tions great & numerous non esse are
said to be painful. They may be divided
into 1 Disagreable 2 uneasy & 3 painful.
The Disagreable are y sensations
tions w: arise from the qualities of other
bodies such as Colours. Tones &c. or from
those limitations w: we receive from y our
Organs of Sense. Sens. Hear. smelling & Taste.
The uneasy & painful are distinguished
from y Disagreable by being referred
to a sensation w: exists in our own bodies.
The uneasy are more or less vague & not
limited to any one place such as Confusion
in the Head. Oppression in y Breast &c

bearing in the Sense.

The painful sensations are always referred to one part sometimes to a very small part & seldom occupie a large space. It usually arises from a force of difficulty in the exercise of our faculties. Pain arising from circumstances accompanying causes to produce a difficulty in the exercise of our functions. This is all we can say on the distinction of pain, for a more precise meaning of it we must refer you to common sensation.

Let us now enquire into its causes. It depends on the condition of the part to wch we refer the sensation wch

depending upon some bodily cause affecting it.
Dr Gregory says, I hope, that there are
imaginary pains, but in his time this
taken. We cannot have the idea of pain
renewed in our Memories. ~~[illegible]~~
~~[illegible]~~. The ideas of which we
acquire by Smell & Taste cannot
be renewed by the Memory. Pain ap-
pears to be an idea of the same nature
& hath for its object as indeed most of the
Happiness of Life depends on it. We
can renew upon our Memories by cer-
tain trains of Association disagreeable sensa-
tions which we formerly felt, but we never can
renew that precise sensation we felt

(a) The pain felt in an amputated Limb depends upon an Error in Reference & not upon an Affection of the Limb itself, or upon any Change induced in the Brain.

in Pain Mental by the Force of Imagination. — If we the Memory of pain is renewed in flesh or at any time it must be lively by means of certain Sublimary Signs. Hence we dream of a painful a real pain must attend thereon. An repeated experience has often taught me to Regard to the Pock-Lick. (a)

What is the Indication of the part wipro-duce pain? — were Confusion of a certain Degree of Stimulus produces pain. The Force of right sometimes brings on a pain in the Eyes. Intensity of sound likewise often occasions pain in the Ears. But both these Confusions may be reduced to the

Sense of Pain is as the Eyes and Ears are affected with Pain in Consequence of the Pain the organs of Touch as well as Organs of Vision & Hearing.

Pain ~~[illegible]~~ depends on the following causes external or internal to our bodies. Pain arising internal to our bodies. — To this we have add every possible or extension of any ~~[illegible]~~ remote part of the system. Consequent pain which arises from the theory of pain depending on a tendency to solution of continuity but were those of pain may be considered as the Cause of pain in.

Pain may likewise depend on Shaping bodies tending to cut nerves in pieces or upon corrosive bodies which tend to

[illegible] the feature of the Brain.

What shall we say to those pains which we consider as Diseases of the Brain? Do they alternate? by enervating or fatigue the Brain? I shall not answer this yet.

But there are sensations which are ambiguous between painful & uneasy sensations. Such as the Non-Pain. Possibly the [illegible] which we shall say more hereafter.

Still the same Pain may be referred to Things which tend to a Solution of Continuity could produce it. Pains appear to act by exciting the nervous power to excess for Insurrection.

Intense pain of all kinds appears to depend on Distortion, Obstruction

or the Growing of a Dog.

4 3 from. the 1st takes place in the
Internal Organs. the 2nd in certain
swellings of Joints & the 3rd in the Ligaments and
No Judgment can be formed for want of
internal pain from the immediate effect w:
pain arising from external causes. the
Pain in the Gout resembles a pain ex:
cited by some boring instrument, while it depends
upon nothing else but Blood overstretching
narrow Vessels. — But these are pains
from internal & external w: have a greater
Relation to each Other, & yet there is not
the least Common Cause in y: Causes which
cause them. this depends upon a publicity
y: we cannot explain.

2d. Does the degree of pain depend on either upon 1st the force of impression or 2nd upon the sensibility of the part affected. Dr Gerbius supposes its degree is always proportioned to the danger 2d. it threatens the system. But this is not true, for in cases of great sensibility in particular parts we see the most excruciating pain with little or no danger. The degree of pain then will depend chiefly upon the situation of the parts, how far the force of impression may influence the degree of pain I shall not enquire here.

We come to speak of Anxiety. all bodies act either externally or on the nervous System. wh. gives a painful sense of impressions but there may be impressions without our being able to refer to the place where the Pain is seated or the Cause wh: excites it. Pain depends upon impressions external to the Nervous System. the "molest sensations" belong to the last kind of impressions wh. I have distinguished by the name of Uneasiness instead of Anxiety wh. I think includes too much. ~~The~~ Pain is attended wh. Aversion & an effort to remove its Cause, whereas Uneasiness is attended

which but accidental. Sports to remove it such as Gaming or Restlessness and Inquietude. But there are certain Sensations which do not rank with painful or unpleasant as the Appetite of Hunger Thirst &c. Let us now enumerate the various species of Uneasiness. The chief Example of it is Vexation which arises from the Nervous System universally ~~affected~~ considered. When it is in a proper State Alacrity Gaiety Confidence & Courage succeed, but when it is in a contrary State Moroseness Idleness Fear Hesitation Irresolution Doubt & Despair always succeed in a higher

or lower Degree. This is general called lower Spirits & differs you see considerably in Degree. You may easily know the Causes of these Sensations from what was formerly said on the Laws of the Nervous system.

1st Pains & Interruptions in Thinking

2nd Uneasiness from difficult Respiration called an Oppression on the Breast.

3rd Uneasiness from the difficult Action of the Heart depending on a weakness of the Heart itself or Resistances to its ready & free Evacuation. It is impossible to distinguish when the One or the Other of these take place. Syncope depends

upon the foot. the last Occurs in Case of Colyke.

Pain arises from an internal Action of the Stomach, occasioning what is called "Equitudo". this Pain of Uneasiness occurs more frequently than any of the Rest from its Connection with every part of the Digestion. But the Condition for Uneasiness depend when it arises from the Stomach? This point is involved in Darkness. Great Debility is often attended with a Cause of Uneasiness. The Anxiety of Hypochondriacs to be referred to this source. But it may arise also from a Cause of Resistance to its

action such as a constriction only.
Pylorus. This is a most fruitful
form of Uneasiness in the Stomach.
The Pylorus from its situation is very
liable to these constrictions. The Conse-
quence of this is a weakness & Inversion
of the Peristaltic Motion of the Stomach
& Intestines. By forcing the Stomach
it squeezes out the Gastric Juice which is
known to neutralize the Cardiac
Sensation. Vomiting depends upon
a Constriction of the Pylorus especially
when it arises from the Fullness of the
Stomach. Now in the Stomach a Sensation
in Dyspepsia & in the beginning of Fever
& the Pylorus Constricted from the

shall not answer this Question, but leave it to you. I think the state of the Pylorus should be more enquired into in accounting for the causes of Diseases in the Stomach. But again Uneasiness in the Stomach will depend upon a Difficulty of the Blood's passing thro' the Stomach, or upon its greater or lesser fulness of its Blood vessels. These are therefore the principal Sources of Uneasiness, tho' there may be others but we have not time to search them out. This to occur most frequently more especially in Females: all Uneasiness is Sedative to the Nerves and tends to Systemic indues a general debility upon it. If it is not so strong as to stay

the System it afterwards proves pernicious. It produces an Effort of the System to relieve itself.

We come now to speak of the System of the Intellectual Faculties. These are subject to great interruptions & irregularities. The first instance of this is a want of sensibility to those Impressions which are required to excite Perceptions. In Infants this is called Attention or Habit. When the Mind is unable to mark the Relation of Ideas a loss of memory is induced which occurs in Old age. The causes of these are deeply involved in Obscurity, & shall therefore

further enquiring into them. We shall
next consider the irregularity of our
intellectual faculties. These are of 3 kinds
1 false perception 2 false deductions
or Reasonings 3 false or unmeasured
Volition.

1 All our ideas arise from impressions.
when that arises from the present im=
=pulse it is called Sensation. There is a diffe=
=rence between sensation & the mere Renewal
of an idea. Now when objects are present
to the mind we are alert from it we
call it false impressions, or a false view of
a circumstance of our faculties.

2nd False Reasoning. The Renewal of Ideas
depends upon certain laws in the spirit=

-tion. This Association is y^e Faculty of Memory. but it may be in various Conditions. it is Naturally founded on the Relation of things. Every Man forms a set of Associations himself, & other too which are common to the rest of Mankind. Now false Reasoning arises from y^e Mind's not properly marking the Associations or Reasonings we are liable to by every Body round ~~imitat~~

3^d. False or unnecessary Relations ought always to be Reduced from our Reasonings. & ought to adapt to the Relations of things as commonly received. there is ye standard

the regard to our Delirium & Insanity, they differ a little in different Countries but in upon the whole nearly same all over the world. an Insane person in either of these constituted Madness is a person who when angry at a person who has offended him he is said to be mad. or if a great fear when there is no occasion for it he is also mad. but these we see are occasioned or false ideas. All other Madness may be referred to one of these Heads.

Let us now take notice of Madness as joined with Fever. the word Delirium has been employed to signifie this

kind of madness. There are two kinds of Delirium 1 Depending on the increased impetus of the blood in the brain.

2dly upon a diminished excitement or some Resistance in the Action of the brain.

On the 1st The case of Carotids belonging to the head. This is always attended with delirium and depends on an increased impetus of the blood in the brain. But it may occur in the last Fit of Fevers - in Mania it also depends on increased impetus as the full Pulse - inflammatory throbbing temporal Arteries, &c

increased irritability of the Eyes & Face
ale sufficiently indicate.

2nd We have mentioned instances of Delirium
arising from this second cause. We
often find it in Continual Fevers when
the Vigour of the Pulse Fails decline, and
attended with some of those Symptoms
last mentioned of increased Irritation.
It is moreover caused by Stimulating Medi-
cines in the Course of the former.

Liquor is generally employed as a Pare-
goric against Delirium but it ~~[illegible]~~
~~[illegible]~~ is not always present in
the first nor absent in the last, there-
fore we shall not include it in enumera-
tg Delirium.

of Madness without Fever.

We shall call it Insania.

Insania is of two kinds 1st It is attended with a false reasoning with regard to some subject only. 2nd When the Insanity is general with regard to all subjects. This kind is generally called Mania or the melancholia but improperly as it is not attended with a contrary temper of mind to melancholy or bigotry with foolish visionary hopes. Insania affects under a variety of forms etc. It is not necessary to distinguish into different species.

What is the proximate cause of

Delirium? This subject is involved in obscurity, owing to the abstruse nature of the nervous system. I shall however attempt it. In the case of delirium it depends ~~[illegible]~~ upon increased impetus, but this does not act solely. Violent exercise often brings on this increased impetus & yet no delirium attends. increased impetus alone then will not account for delirium. a resistance then to ye brain's actions must always be in view. so that such kinds of delirium can also be effected by a cause or effect upon ye same cause. It is difficult to conceive how

these mixed causes operate, but we have an analogy to it in the narcotics. These are both sedative & stimulating & it is only when they act in the manner that delirium takes place. a person just waking from sleep is in this delirious situation from the anodyne being under the mixed powers of both the causes we have spoken of. when a man dreams his brain is in the half excited state. they can only happen in these cases when some fibres excite part of the brain, but have no other fibres being excited, a confusion of thought

× They differ from Delirium in this i.e. the brain is in a less excited state than in Delirium or Madness. —

(a) Even when Imaginations make sudden transitions from one thing to another & then seem lastly we in one of these situations, the brain is in a too high excited state. hence the Poet justly said "In at wit & madness nearly are allied"

given. now Dreams & Delirium are exactly analogous & could not be in Delirium the brain appears to be in the same state as in a Dream. Delirium and Dreams come on in the same manner. But further the diseased brain of Maniacs shew the organic affections which strongly confirm the Doctrine we have advanced. But an excess of Excitement as well as a defect of it tends to bring on Mania. Some Maniacs live to long without sleep & have fixed & delusive Impressions which are unequal Excitement of the Sensorium causes madness as well as an excess of it. The state of Excitement necessary

depend upon an excess of Excitement but this will not account for madness or Delirium without other causes. What other causes then cooperate to give this unequal excitement in Madness? The nerves may be in Fault as organs of Sense & motion. The nerves we formerly said convey the secreted nutriment, now this different conditions may depend upon this being more or less moistened w: nutritious matter. This conjecture seems to be confirmed by our finding the brains of Maniacs always dryer & harder than is natural. Dr Meckel at Berlin found the specific gravity of y brain

of Maniacs considerably increased.

Fatuity depends upon the Reverse
ness of Madness viz: too great Flaci-
dity & Humidity of the Brain Nerves,
&c: unfit them to propagate Ideas
tions. The Fatuity of Infants evident-
ly depends upon the Cause. Dissection
shewing defect this Defect time & Morgagni
& other Dissectors have found the Brains
of Idiots always Anatomically right.

as this may be subdivided into two kinds 1st When the Imagination is not affected. & 2 where the Sensori^m is affected wth Fear. the first has been called by Author Imagination strong by speaking. the 2d Spirits, the Fancy may likewise be brot under this second kind.

The moving Powers may be divided into two kinds as consisting in Excess of Action & 2d in want of Action.

Spasm belongs to the first. It may be divided into two kinds. 1st Alternating w. Relaxation w. is called Convulsion or Motus Clonicus. 2 Spasm w. does not alternate w. Relaxation. 1st Contraction subsists in one muscle for a considerable time. This is properly called Spasm or Motus Tonicus.

The Causes of Spasm & Convulsion are nearly the same & often mixed. Just attend them to you before when treating on irritability. They may be kind

1st Upon the Force of Impression, having strongly a specific power of inducing Convulsions? I believe not. It would be worth while to consider the manner in which Stimuli operate: wh. are direct or indirect? wh. act from y Force of Impression & wh. act from other Circumstances joining with them.

2nd Upon increased Irritability depend: on a Debility of y Nervous Power.

3rd Upon increased Irritability. Fevers especially those of the inflammatory kind depend upon this Cause. The Symptoms may justly be considered as last Efforts.

4th Cause a Debility depending upon a Want of Tension. This Cause is y Reverse

of the former, & is induced by a want of Energy in the Sensorium.

5: Upon these Causes wch disturb ye establish'd Order of our Actions. our System is subject to Habits wch determine ye Velocity of all our Motions. any Cause from wch disturbs the Series or Train of our Motions may bring on Convulsions

for Instance the Influence we assigned by the Force of Imitation may retain this Way? — be the Reason why persons who when they first learn to play on ye Guitar or Flute dress'd wth Convulsions in their Fingers, from moving them quicker ye Ordinary

The defect of Motion may depend on ye following causes.

1 Various Organic affections of the Muscles preventing their contraction. such as over Distention with Fluids.

2nd Wounds & affections of ye moving Fibres alone or upon Retina.

3d Upon an Interruption of the Nervous Influx from ye Sensorium into the Muscles. Now two last are only properly to be called Paly. the first Case may be called Similia Retina as the Muscles & Sensorium are seldom affected in it.

I shall confine myself only to the last cause, which may be reduced to two heads, as depending 1st upon causes external which interrupt the influx of the nervous power or 2nd upon diminished excitement.

The 1st class comprehends may depend on extraneous bodies — Affections of the brain — Tumors — Exostosis of the blood vessels of the brain — Effusions — Contractures — Congestion of the nervous system — increased Irritations — Nervous forced Acts &c. — The multitude of the effects induces it most frequently especially when in the nervous system.

The Detection sufficiently confirm. the Debility in all its Degrees since from this Cause.

2 Diminished Excitement - it is hard to tell when this is in Excess or Defect. we are sure that Cold - Narcotics & some Astringent - Depletion seem act by inducing a diminished Excitement or Atonia in the Moving Fibres.

Of the Symptoms of Respiration

We come now to treat of the Symptoms of Respiration or of those causes which render it difficult. The Subject is very extensive, & so from that due, I have chose to give you all the causes in a Synoptical or tabular Form.

Inspiratio fit difficilis

I. Ex vitio Aeris

1 Primis rare

2 Primis calidi

II. Ex Angustia viarum per quas Aer intrare debet.

Angina varia Clab. VIII. G. X Sauvage

Orthopnoea a deglutitio G. IX Sp. 9

— a Bronchocele 10

— Convulsiva 24

III. Ex vitio Thoracis

1 Vitiata Conformatio

III In vitio Thoracis

— Dyspnoea Rachitica G. VII. Sp. 10

Ortho a Gibbo G. VIII Sp. 9

2 Casu

A Luxatione } Dyspnoea traumatica 15
B Fractura
C Aneyloi } Orthopnoea traumatica 14

3 Sine Dolore Motum Vegantis

Dyspnoea traumatica

Pleuritis.

Pleurodyne

IV. In vitio Musculorum Inspirationi fa-
-milliarium.

Dyspnoea traumatica 15

Orthopnoea traumatica 14

Dyspnoea Scoliotica 22.

Dyspnoea Galenica 17.

Dyspnoea ab Hydrocephalo 23

V. In vitio Pulmonis

1 Rigidi

V. In Vitio Pulmonis

1 Dyspnoea habitua 10.

2 Spasmo convulsivi

A Ab aere frigido.

B Ab aere inquinato.

Asthma Metallicum 12

Asthma a vaporibus 16

C Ab Irritabilitate

2 Asthma Idiopathicum

Asthma Humidum 1

—— Convulsivum 2.

b. Asthma Sympathicum

Asthma Hystericum 3.

Orthopnoea Hysterica

Asthma Hypochondriacum 4

—— Stomachicum 8.

—— Convulsivum Boerh. 19

Orthopnoea ab Antelathia 15

Asthma Arthriticum 5

V ex vitio Pulmonis

2 G. b Asthma Sanguineum 11

——— Cinereum 14

Orthopnoea febricosa 20

—— a Vermibus 17.

3 a Matrice Occlusi

A Sanguine

Peripneumonia.

Haemoptoe

Asthma plethoricum 15

Orthopnoea peripneumonica 1

— Pseudo-peripneumonica 21.

Asthma a Polypo Cordis 6.

Orthopnoea Cardiaca 2

B. Sero

Dyspnoea, Hydropica 1.

Asthma Cachecticum 13.

Inspiratio fit difficilis

V a Vitio Pulmonis

B. Orthopnoea ab Hydrothoraca 12.

C Vinum

— Asthma Catarrhale 16.

—— Pneumodes 17.

D Aer

Dyspnoea a Pneumatica 12

E Pure

Orthopnoea a Tonica 7.

Phthisis pulmonalis

F Calculus

Dyspnoea calculosa 3

G Cubare

— Asthma Cubiculorum 7

H Tussare

Dyspnoea a Tuberculis 2

— a Hydatidibus 4

V Ex bilio Pulmonis

H — a Stratomatibus 5

— a Vomica. 6

VI Ex Pulmone compresso

1. a Causis intra Thoracem

Dyspnoea a Corde 11.

Orthopnoea ab Aneurismate 8

— a Pinguedine 6

— a Lipomate 18

— a Hydrothorace 5

— ab Infiriemate 13

Dyspnoea traumatica 15

2 a Causis in Abdomine existentibus

Dyspnoea a Meteorismo 7 [illegible]

— a Graviditate 8.

— a Hypochondria 9

— a Stomacho 13.

— a Liene 14.

VI De Pulmone contrepa.

2 a Gastrocele 18

Et Mesenterica Gastrocele 11

Ventosa Hypochondriacum 18.

I De Lues Venerea. very few Diseases arise from this Poison, Hunter & Cullen has been too diffusive upon this subject.

II De Inquietudine per quas Genitalia debet.

All the Diseases ranked under this head are rather Symptoms of Diseases than any thing else. Men attempt in vain to define the Disease is to be apprehended. Savage has considered some of them as Diseases of Genius especially Hunt, but they depend upon nothing else

but a narrowness of the passage thro' wh. air dr. pass.

III. Lt bi tio Thoracis. wh. may be either 1. congenital or produced shortly after birth. 2d. may arise from occasional Lesions, or 3d. may arise from pains restraining the Muscles wh. should move y Thorax. to these we might have added 4th a difficult Inspiration from Decubitus wh. may be brot on by 3 Causes 1st. an affection of one side of the Lungs wh. prevents them being properly exercised 2nd from a tumor or water being accumulated on one side. 3rd from the Lungs being compressed by water in the Abdomen, & therefore unable to dilate themselves in bed. The Inspiratio difficilis from y Posture of y Body might

have been brot in under this Head.

IV. Ex vitio musculorum Inspirationi sommitentium.

This often takes place in ye Lungs from the Muscles being rendered paralytic by increased Circulation of the Blood, or by Pains resembling the Rheumatic, or by the Globus Hystericus wch Lucas Cu: thor tune hotice of in the Lungs.

The Dyspnoea Galenica happens in Consequence of cutting the Phrenic Nerve in ye way of Experiment. But I have seen it occur from Other Causes. The Dyspnoea Apoplectica might have come under this Head as depending in some Measure upon this Cause. —

vax Vitio Thoracis. The chief Causes of difficult Respiration are to be reduced to this Head, as they are ye most general primary Affections of the Lungs.

1. Rigidity of the Lungs. this may include besides those we have mentioned Obstrictions of the Bronchia. Morgagni & Bonetus give us several Instances of it.

2. Spasm. This is a frequent Cause of difficult Inspiration. the Cartilages serving Inspiration are liable to Spasm. this Spasm may depend on particular Stimuli applied to ye Muscles serving Inspiration or upon a general Affection of the System wch disposes it to these spasmodic Structures.

The Asthma Metallicorum is ~~not~~ two general.
1. The Action of Sulphur ~~must be~~ is not
reduced to this Head, but it rather be-
longs to the Irritating Substances which
induce Spasm on the Lungs, or destroy the
Mobility of the Nervous power. for the
⊕ & the Mephitic Air w: the ☿ carry
it w: it Act in this way. —

The Asthma Stomachicum deserves our
Notice. Few Asthmas come on w: out
affecting the Stomach first. This Ima-
gin depends upon a Stricture of the Pylorus.

Orthopnoea as an Antihathma very impro-
per. it would be better to say a Pathemata
for we often see Dyspnoea brot
on by Passions of the Mind. &c

Irregular motions brot on by Odors or things of ye kind are most apt to show themselves upon the Lungs.

The Asthma Arthriticum is a common Disease, but does not depend on a Metastasis of Morbific Matter, but on ye Equilibrium of ye Nervous System being destroyed.

The Asthma Exanthematicum. The Asthma brot on in Consequence of Ulcers being dried up may be reduced to the Head. It does depend on Morbific Matter stimulating the Lungs, but on ye same Cause as the Asthma Arthriticum.

The Asthma Senescentum very seldom

occurs. I know of no Author who has described it. Lavauge pretends to have borrowed it from Cullen, but Junker says no more than that if such a Symptom should occur it must be cured w: the Mercurials in the usual way.

Orthopnoea Febrilis. Everything brings the Blood too quickly to the Lungs & brings on Dyspnoea. But it occurs too in the cold fit of Fevers from (not a Congestion of Blood in the Lungs) but a Spasm on the Capillaries of the Lungs.

——— a Vermibus. This is evidently Sympatomatic & requires no Explanation

3: The Matters w: by filling the Lungs

occasioning difficult Inspiration are very various.

Sanguinis. This may act either by being congested in its proper vessels or effused into the Bronchia. The first of these occasions Effect - all quicken Inspiration may be called difficult Inspiration. It generally arises from an excessive Quantity of Blood in the Lungs. The difficulty of Breathing in Fevers depends on this Cause from Blood being poured too plentifully into ye Lungs. - The Inflamat^r & Hemorrhagic Diathesis gives a particular Determination of Blood to the Lungs.

The Asthma Plethoricum attends generally all plethoric Persons.

The Orthopnoea Peripneumonica. is nothing else but an improper species of ye Catarrhus suffocativus.

The Orthopnoea Pseudoperipneumonica is ye Peripneumonia notha of Sydenham & Boerhaave. It is nothing but a Catarrh or a Congestion of Blood wch is greater than ye Stimulus wch induces it.

Dyspnoea — Calculus depend generally upon Calcarious Earth, at least all ye Stones I have examined are of this kind.

the Dyspnœa a Pulvere. is a real Dis:
ease. the Clay Drefsers are most subject to
it. It is somewhat surprising y: Millers
are not subject to it. perhaps it may
be owing to y: Power being less offensive
to the Lungs. The Millers Cough
proverbial - owing to Cold
Burdens &c - Hair Drefsers
who live among Flour
not subject to it.

Symptoms of the Heart's Action.

The Consideration of the Pulse naturally comprehends every thing relative to the Heart's Action.

I shall consider the Frequency of the Pulse, & confine myself to those which are most commonly marked. But here we must premise that ye same causes always excite both ventricles of ye Heart at once, & y: the Action of ye Heart depends upon its Irritability. This Irritability may be considered as a vis Insita, or as depending upon the Sensorium. I do not suppose the first can be independant of the last as Dr Haller has done, but shall assume it at present meaning by it those causes which act on ye Heart

it act directly or upon the Sensorium first & indirectly upon the Heart.

The Causes acting upon ye Heart directly are 1: an Influx of venous Blood.

2 more or less Evacuation of ye ven: Blood.

3 The different states of Irritability.

4 Unusual Stimuli applied directly to the Heart itself.

The Causes acting on ye Sensorium may be reduced to ye following

1 Direct & 2 Indirect Stimuli.

1: we shall consider the Causes wch act directly on ye Heart

1: What ever increases the Influx of the venous Blood beyond wt is ordinary

will increase the Pulse. Muscular Motion will produce this Effect as also a frequent Respiration wch is ye most common Cause of a quick Pulse. If the size of ye sanguifer: System is ~~not~~ over proportionate to ye Heart's Magnitude a quick Pulse will be produced. This is ye Case wth Infants hence ye frequency of ye Pulse.

2 Imperfect Vacuation of ye Heart's Ventricles will produce a frequency of Pulse, as ye Heart's Contraction always continues the same. This imperfect Vacuation arises from Causes 1 a Weakness of ye Ventricles of ye Heart. This occurs

in all Cases of great Debility as in Deliqui-
um Animi, or in dying Persons. hence
we always find a frequent pulse just
before Death. unless from some Cause
y Sensibility of the Heart has been
destroyed. or it may arise 2ly from
a Resistance in the Blood: vessels de-
pending on Aneurism Polypus Obsti-
nations & Spasmodic affections of the
whole Arterial System. the Pulmon:
Artery is affected by every thing wh: renders
Respiration quick or difficult so that y:
Blood: Course is more apt to be quickened
in the Lungs than in y Aortic
System.

3 Increased Irritability may

increase the Heart's Actions. This will depend upon increased Irritability in the whole System. Hence y frequency of Pulse in Infants & Females.

2 when in general Atonia & Debility which gives Irritability & Irritability

4th Unusual Stimuli of y direct kind have been employed to increase the Heart's Action. Physiologists have called in Heat, Heat, or a Specific kind in the Blood as direct Stimuli to the Heart. But this is without Foundation from y Heart's insensibility to them both, & from y power of Habit rendering them ineffectual. What are y unusual Stimuli which act on y Heart? These are fewer than I would wish.

as appears from Dr. Smith's Experiments. — we are often sure of an Acrimony circulating in ye Blood, & yet no quickness of Pulse attends it, as in Cases of Febrile Jaundice &c. Mercury Antimony & Arsenic are powerful stimulants, & yet when received in ye Blood never affect the Heart directly. if they ever do affect it, it is indirectly by stimulat: the Stomach or some of ye Intestines. What has been said here applies still more to the Arteries. if there ~~are any~~ direct stimuli & must be ye Sedative Impression but can these act on ye Sensorium first & indirectly

on ye Heart.

Let us now consider the Causes
wch act on ye Heart by ye Intervention
of the Sensorium. These are Stimuli
of a direct or indirect Nature. the
1st are originally stimulating; the last
are at first Sedative but prove stimu-
lating afterwards. the 1st of these prove
ye most frequent Cause of ye Quickness
of ye Pulse such as Fever &c.

What does Irregularity of ye Pulse de-
pend on? on Pulsations not succeeding
each Other at proper Intervals? this
is called Palpitation of Heart. It requires
no Answer from us: has been said. See
Dr Gambius § 770.

Having considered the velocity of ye Pulse let us now attend to ~~[illegible]~~ its Hardness Softness Fulness &c

It is very difficult to tell precisely when each of these take place. Some have supposed a Distinction between a quick & a frequent pulse, but I have never been able to perceive it so accurately as to speak of it wth Certainty. I always judge of ye frequency of a Pulse by its Suddenness. the Blood has a lateral progressive motion. now in ye sudden pulse we feel ye lateral stroke only wch is known by its being

pointed & accumulated. It is common
ly distinguished by Surgeons by ye name
of a Jerk in the Pulse. It is generally
opposed to wh: is called ye undose Pulse
in wh: ye progressive motion is evidently
perceived. You must consult your
own Experience for a more accurate
knw of these Distinctions.

The full & strong Pulse are often
united. The full Pulse depends not on
more Blood evacuated from ye Heart
but upon Resistances in ye Course of the
Blood. This is evident from ye full
Pulse wh: follows Ligatures. This
lays a Foundation for a Distinction

between a full & strong Pulse. the full pulse is generally slow & soft. the strong for the most part hard & quick, & gives a sense of Tension to ye Physician Hand. a strong hard pulse is always a favourable symptom in Fevers but it is still more favourable if it is full only wth out any great strength. a full ~~pulse~~ Pulse does not always indicate a great quantity of the Blood in a Patient as the Fulness of the Pulse is greatly influenced by the Size, situation &c of the Artery ~~of~~ at the wrist. the full Pulse in Inflam^n: Tumor likewise depends only upon a Resistance & not upon an Increase of the Quantity of ye Blood or

of the Heart's Force.

The Hardness & Softness of ye pulse depends upon ye Muscular Fibres of ye Arteries themselves. the first is owing to an Excess of Tension in ye Arteries. the last to a want of it. It is the greatest Desideratum in Medicine to know when ye Pulse is hard & soft & wh: are all the intermediate Degrees between a hard & soft Pulse. I conclude then that a 10,000 Circumstances vary the Pulse, & that nothing is more difficult than to form a regular Judgment of Diseases from it. C

think the different states of Equality & Inequality of the Pulse w^d indicate the state of the System much better than the Frequency of the Pulse. here I must add that I have never Observed the nice states of the Pulse Solano takes notice off, or if I have by accident discovered any of them I have never Observed the critical Discharges follow them that Solano talks off. perhaps this may be entirely owing to our Northern Climate in wch Fevers & Other Diseases Observe less regular periods than they do in warm Climates. —

Altho I said before y: $\frac{2}{7}$ Consideration of remote causes would come under $\frac{2}{4}$ Methodus Medendi, yet I think it will be of use to treat of a few of them in this place. The subject is very extensive — but I shall confine myself only to Air & Diet.

1: We shall treat of $\frac{2}{4}$ Sensible Qualities of the Air.

2: We shall treat of $\frac{2}{4}$ Properties of $\frac{2}{7}$ Air by w: I mean its Density Elasticity &c.

3: We shall take notice of $\frac{2}{4}$ Air as impregnated w: foreign Bodies.

1: Heat & Cold are very extensive in

their Operation, and act differently in different times even in the same Degrees.

their Action is diversified 1st by their Degree of Intensity as expressed by y Thermometer in as far as the Body is considered as inanimate, or as a common Mat. these are 2d: are called y Absolute Effects of Heat & Cold. But 2nd they both operate differently on an Animal Body by Relatively. i.e. their Effects are Proportioned to y generating power of Heat in the System. 2d: Degree of Heat gives the Body its uniform natural Temperament, or neither encreases or lessens it? — 62° in this Climate. The Body always

remains at 98°: in this Temperature. any thing beyond this encreases the Heat of the Body. any thing below 62° lessens the Heat of the Body. this may be very different in warm Climates. but we have no Experiments to determine this.

3rd: The Effects of Heat & Cold are diversified as acting on Sentient Bodies. & hence the Perception of them both are diversified by the States of the Sentient Animities.

4th: but all we have said concerning the Effects of Cold will be diversified by them acting differently on the Solids or Fluids.

5th: They will all be diversified by the Power of the System to resist or receive them

(a) Heat beyond the Ordinary Heat of the Body acts as a Stimulating Inflaming Impression, bringing on Blisters &c. if it should ever arrive at 150: the Serum W: be in Danger of being coagulated. —

restorative Effects. —

we shall now speak in particular of the Effects of Heat &

1: we shall speak of its Absolute Effects upon the body. I formerly supposed there was a subtile Fluid in ye Nerves w^ch^: was under the influence of Heat & Cold. this Fluid is a portion of inanimate matter Heat therefore acts upon it & gives it greater Elasticity & Rarity w^ch^: induces Mobility in general or Sensibility & Irritability so far as it depends on Sensibility. (a)

2^ly^ Absolute Heat gives Extension to ye Fibrils

solids, w.h induces laxity - a want of tension, & in consequence of this mobility & contractility.

3.rd Absolute Heat operates on our fluids as a stimulus & expands them to a greater degree, & hence induces an increase in fluidity, w.h disposes them more readily to expand the solids.

4.th Absolute Heat acts upon our fluids as mixts capable of intestine motion. in a manner then putrefaction, or the evolution of a da line alkali w.h likewise still further increases the fluidity of our blood.

5.th Absolute Heat proves a stimulus

to ye nervous system, & by this means accelerate the Circulation of ye fluids, which shows its Effects on ye Surface of the Body, upon ye Ac: of ye Heat being applied Originally there, as well as upon ye Ac: of ye natural Tendency of the Blood into Circulation to the Skin.

6th: Absolute Heat as wolving a saline matter increases its natural Acrimony: Acrimony acts more in proportion to its being concentrated. Heat dissipates ye more fluid parts of the Blood & thus increases its Concentration. This Ac: for ye Acrimony of ye Bile [illegible] Re-

so much encreased in Summer time.

7th: Absolute Heat shows considerable Effects in Respiration. Dense & cool Air we know favours Respiration, but a hot Air we in always rare & always introduced in less Quantity & before the Dilatation of ye Lungs when the Blood is more difficult to be transmitted thro the Lungs. It upon ye Rule of its Quicker Circulation in ye Lungs & System it is more apt to stagnate thereby.

But all these Absolute ~~Effects~~ powers of Heat have relative Effects on an animated Body. Very Temperature of ye Air beyond 62° shows ye Absolute Effects of Heat,

lent & communicates of generating power
of system which in some measure
obviates the absolute effects of heat.
But a degree of heat below 62° encreases
& generating power of the body.
In the Mean it is generally felt in
a uniform temperature. I formerly
explained the Reason why the heat of
the Body is not encreased in proportion
to the heat of the external atmosphere.
The absolute power of heat in rendering
the Other of an human body rare cannot
there strong Reflections on which Animal
heat depends. We have a beautiful
analogy of something of the same kind
taking place in a globe of sulphur

which accumulates & retains the heat according to its in a certain state of density. The fragment we under it fluid it covers its electric matter.

Our sensations of heat are greatly diversified by the state of our bodies. Thus if we take 3 cisterns each of them filled with water one of 60° another of 50° & the third of 30° if we put my hand in the cistern of 60° & then put it into the cistern of 50° it will appear an evident coldness, & if we then plunge it first into the cistern of 50° & then in the cistern of 30°

But the Absolute Degrees of Heat still continue to operate, for the Effects of the Heat from 60° to 70° are considerably greater than the Effects from 50° to 60°. Altho the Sensations may be nearly the same.

The Effects of Heat are likewise diversified by the Ordinary Temperature which is agreeable to the Body. thus a Change of Heat from 50° to 60° is scarcely perceived, but a change from 60° to 70° is sensibly felt.

Heat is never a powerful or

painful Impression untill it exerts its Absolute Effects. It is only a degree of Heat above 98°: that proves painful or stimulating.

Heat generally acts unequally upon the System i.e. more upon ye Fluids than the Solids inducing Expansion Elasticity &c ~~upon~~ in them. hence Plethora's & Accumulations of Blood are more frequent in ye Spring than at any other Season upon ye Acc. of ye Heat not acting equably upon the System.

Heat acts differently upon System according to ye Temperature they have

been accustomed to. Thus a Man going from our Climate to ye West Indies is more to be affected wth the Heat than a Person born there, while a Native of the West Indies is more apt to be affected wth Cold here than a Native of Britain — The Reason why Strangers are so subject to y^e Yellow Fever in y^e West Indies may easily be understood from this.

Let us now speak of y^e Absolute Effects of Cold.

1st Absolute Cold condenses y^e Atoms of our Nerves & thus lessens Sensibility & Irritability.

2nd: It gives a firmer & more tenacious Solid, wch gives more quick and

as $\frac{9}{10}$ of mankind live in a degree of Heat below 62°.

their oscillations wh. in some measure obviates the Immobility induced by ye Cold. it never sinks ye generating power of Heat below 98°: no more than Heat increases it.

3rd It condenses the Fluids & acts the Pressure upon them to wh. we said of Heat. —

Hence are many Means of obviating the Effects of Cold in our System viz.

1: It increases the generating power of Heat when applied in a certaine degree.

2nd It is a powerful Stimulus & prompts the System to exercise wh. we know

(as not only so but it actually stimulates the system itself. This every One must have experienced after plunging their hands in snow, or very cold water. —

obviates the Effects of Cold. 1st

3rd It encreases Perspiration wch acts as a warm Bath to the Body. this Atmosphere is confined by our Cloathing. yr Cloathing is warmest then wch receives it propagates Heat most such as Wollen &c — the Looser a Garment is the warmer as it confines more Atmosphere in it. the Chinese all wear Garments of this kind lined w: the Furr. Blankets are always warmer, the Looser their texture are. Our Houses likewise are more warm by confining Our Atmosphere. hence a greater number of People in a Chamber the warmer it becomes.

4th The Effects of Cold are Obviated by

Artificial Heat.

The Effects of Cold ~~not~~ independant of its acting as a Sensation are

1st to induce Contriction in all irritative parts such as ye Lungs. & sometimes over all the Surface of the Body. in this manner it often brings on Fever.

2nd This Contriction determines ye Blood more plentifully into the Viscera. diminishes Perspiration & increases ye Urine, as well as ye Perspiration from ye Lungs.

— It likewise determines ye Blood to ye Joints, & hence the Cause of Rheumatism.

3rd Cold acts unequally upon ye System

of Relative Cold

viz: condenses the Solids, while the Fluids remain the same, or rather as Often rarefied by the Heat generated by the Stimulus of the Cold. from this you will easily understand ye Theory of Inflam^n^: in general & of Rheumatism in part^r^ especially when ye Cold is applied to One part of the Body Only.

But 5^ly^ the Effects of Absolute Cold are diversified by the different states of Excitement in the Sensorium. Cold we know tends to destroy ye Mobility & Excitement of the nervous Other, but from its Stimulus it Often rather induces an Excitement of ye Sensorium than diminishes it according to ye different States of the System. It

depends upon the nervous Ether being in different Capacities of being acted upon.

– I am sorry I am obliged to conclude this Subject so abruptly, but I am necessarily called out of town. & as the Season is so far advanced I shall proceed next to the Methodus Medendi.

Methodus Medendi

This is either Empirical or Dogmatical the 1st Regards no Indications nor does it enquire into the Qualities of Medicines the 2nd enquires into the Operation of Medicines & the State of the System in wch they are given. I am determined to treat the Subject now under Consideration in this last way, but shall derive all the principles I offer you from Experience.

The Method: Med: has been divided into 4 parts 1 Conservatoria
2 Preservatoria
3 Curatoria
4 Mediatoria.

The 1st relates to the Preservation of the powers of Life. It is sometimes called Indicatio Vitalis

The 2nd consists in defending the Body by the Action of the potentia Medicatrix. This is likewise called Indicatio Prophylactica.

The 3rd consists in changing the Proximate Cause of a Disease so as to restore the Body to Health.

The 4th for when we Dont know the proximate Cause or cannot reach it, in wch Case we order palliative Remedies

These Divisions of the Methodus Medendi are unnecessary. The 3.rd or Indicatio Curatoria comprehends all ye rest & I shall confine myself ~~only~~ to it alone.

Most of our systematick writers lay down general Rules in ye Medendi Methodus. in Imitation of these I shall deliver a few wch shall be very short & shall be by the way of Strictures on Dr Hoffman's Rules.

His 1.st Rule is to follow Nature. call Physicians from Hippocrate to Sydenham.

& downwards have declaimed on this subject. The System I grant easily restores slight Deviations of its Ballance. many particulars might be brot in Illustration of this w: you may recol: lect when we spoke of the Action of Heat & Cold. many remote Causes of Diseases excite the System in such a Manner as to remove themselves. in a word then it appears very evidently that there is a "vis Naturæ Medicatrix" but still I say the powers of Nature have been too much extended.

1st This has arose from an Opinion that the soul was diffused thro' the Body & superintended all its Motion - This was Stoll's Notion - or 2dly that the Deity divided it. - This last too Absurd to need a Refutation. - The 1st is refuted by Dr Wheyt - & supposes the Divisibility of the soul - likewise its being employed about several things at the same time each of w. are Absurd & contrary to all sound Philosophy. - What then is Nature? - The same in the human Body as in the inanimate Parts of the World. - a conserving Property w. acts mechanically & possesses neither wisdom Power nor Goodness in the human Body. The same in Vegetables as in the human System. Trees yield to the first return of Spring - & then of Sap force their Growth &c.

The Stahlians imagine the Soul acts in curing all Diseases, & do not suppose it depends upon the Mechanism of the Body. There are many Diseases in wch the Efforts of Nature do nothing such as Palsy, Apoplexies, many Spasmodic Disorders, Jaundice &c. But the Efforts of Nature are often fruitful. many Stahlians acknowledge that there "Anima Medica" commits mistakes. Physicians I say then have taken to extravagancies of the powers of Nature. The progress

Here understand y: I believe all
Nature to be under the Administra-
tion of a Being infinitely Wise -
powerful & Good - ~~But~~ who will
overrule even Partial as as to
make it contribute ~~to the gen.~~
Good of the Universe - But Evil
we have - we see it - we feel it -
in every Part of Nature - Storms
Thunder - Lightning Insects &c
are real Evils - all must confess
this - Altho' they are overruled
as to contribute some ways to the
well Being of the World - To return
to enquire in w ~~Case~~ Diseases
Nature helps - very few - corrects
slight Deviations only - Drives
them away on Vegetables - call
for Drinks & light Aliment -
to wound - from Hurt Bodies

of Medicine in my Opinion has been much retarded by paying too much attention to Nature & by being too diffident of the powers of ~~Nature~~ Art.

Dr Hoffman's 2nd Rule is to evacuate all Morbific Matter as soon as they are formed. this is a good Rule distinct directly ag.st the former One, as it overthrows all the supposed Notions concerning Concoction &c. his 3rd Rule respects the last, & therefore deserves no Obviation.

In all Fevers ch.f pals tho' more frequent, yet as they are most used to imitate

thro. thus ye water of a Dropsy sh. be evacuated thro ye Kidneys or ye pores of ye skin.

See Dr. Hoffman's Other general Rules in his Works. they are most of them so plain that they require no Explanation.

I shall now proceed to the Cure of Diseases, & for yr purpose I have given you a Table wh comprehends all ye Medicines used in curing Diseases of the Solids & Fluids.

excites Inflamm.: - In Nausea Vomiting & a few more.

1) In W: the does no Good - In some we shall find inactive - some want Wisdom - Others Power Others Goodness -

1 Inactive - small pox - no Notice when Contagion is over: - no Reputation at - The same many Fevers.

2 Wisdom - Fevers - Depending weakens the system -

3 Power - cannot often overcome the cold Fitt & are Intermittent without Drinks &c.

4 Goodness - neglects to furnish in Cases for our Defence - but seldom Cases we in Age.

Indicationes Curatoriae

I In Morbis Solidorum

1 Simplicium

A suppeditare materiem deficientem per
Nutrientia

B abstinere superfluum per
Erodentia

C roborare laxam per
Astringentia

D laxare rigidam per
Emollientia

2 Motricium

A ciere Motum per
Stimulantia

B minuere motum per
Sedativa

C coercere Motum inordinatum per
Antispasmodica

II In Morbis Fluidorum

1 alterare vel immutare

A aggregationem

a spissam per
Alterantia

b tenuem per
Incrassantia

B misturam mascentem correctione fervis

Shall now point out a few Diseases in which the Pulse of one two or all these appear.

1. Fevers. Nature exerts herself only partially to overcome debility — some determinations to the Brain viscera & bowels which bring on the worst of consequences — In Intermitting the frequency of Paroxysms instead of weakening them tends to encrease them: and in Obstructions — Dropsies &c. — In Fevers. Delirium or Insensibility thing called for — In Inflam. Nature tends to suppurat: & Gangrene

2 Pleuro. Nature confines it — not thro' the pleura — but into the lungs. —

3 In ~~Hypochondriac~~ Melancholia

a generatim per
Demulcentia
b specialiter per
α Acidacida
β Antalkalina
γ Antozumica

2 Evacuare

A Humorem unicum omnem

a Mucum
Enthema &c
b Salivam per
Sialagoga
c Urinam per
Diuretica
d Perspirabile per
Diuretica + Diaphoretica
Sanguinem per
a Venas naturales per
Emmenagoga
β venas artificiales per
Phlebotomiam &c
f. Alvum per
Vesicantia &c

B. Humorem varium per
a Emetica
b Cathartica

The lead was to bleeding — Cow-
pox pustulement the only use.

4 In to gastric vitiate or pain
of the stomach — Vomiting excited —
Bleeding indicated — no natural
Hemorrhage. — Antimonial wine —

5 In Dysentery — Purging immoderate
— only to be checked by promoting
another evacuation —

6 In Palsies — Apoplexies — & all the
train of new diseases — Nature
active

7 In Hemoptoe — or vomit, hence
fracture overcomes the Pulmonic —
Cough retards instead of leading
to Cure. —

If unravelling the System
every Practice of the Methodus Medendi has proceeded in
the Way mentioned particular Indications from the
several Heads of the Causa proxima & reduce them to
Classes from our system of Pathology.
It is difficult & is far from comming under Perfection. Most
systematics tho they different Theory have agreed pretty
nearly in this & only give mine as a Syllabus. Not as
yet I have first made a Division into the Diseases
of the Solids & the Fluids.
I begin by considering the Indication of the simple Ideas
viz to supply defect in any Part. This is done by Nourish-
ment. It is first applied to the Fluids & relates to both
solids & Fluids when deficient.

I shall not always be able to keep to this Plan &
often we must consider the Matter employed before we
can consider the contraindications.
With respect to Nutriment we know extremely
little of the Theory of it applied to particulars as the
Animal is nourished by grass another by other Animals.
I shall consider what Experience has taught us with
regard to the Matter. It is either vegetable, animal or
of an intermediate Nature.

We are told Nature cry out in
tidewaily — too slow or too violent —
— not so — in the Case before cited —
we must be the most humble
Ministers of Nature does act direct
in opposition to her — Who would
do a Home if required to Demolish
the foundation of the Edifice — Sometimes
it is turned round — Nature always
ways to be distrusted — for Nipfol
Ingenuity may do — But it ought never
to be subjected to Theory

I think the Vegetables may be divided into three Kinds
1 Sugar. 2 Farina 3 Oil.
Whether or not there is a 4th Class of mucilaginous Matter distinct from any of these may be an Enquiry, but I think it may be reduced to one or other of the former. The Vegetable Matter is of great Diversity & I am persuaded that many more Subjects contain aliment Matter than what are in Use, as Woods Barks &c & we only reject soft Matter as connected with some deleterious Qual. I think the three Heads I have mentioned can include every form we know of Aliment & I shall first consider the one we are most acquainted with.
With regard to the Farina there is no Doubt of its being an Aliment & is in the most general Use in all Nations. Oil we know is often taken in but it may be doubted if they dont only take it to moisten the solid Parts more than to furnish a Nutriment but we take it in such large Quantity & sometimes alone that I think it must enter into the formation of any mere animal solid especially as we can find it in the form of a Secretion & besides finding it in its Native form thus used we find that it enters into the Composition of the most common aliment viz the Farina.
With regard to Sugar the Doubt may be as considerable

Of

as we do not find it employed alone as Nutriment, but we often take it in great Quantities & besides this the Peo: ple in our Colonies are observed to become uncommonly fat in the Sugar Season & we find it the principal Part of Grapes, Figs & all such saccharine Fruits wh are remarkably nutritious especially when dried. Whole Nations live on Dates & Figs, were long the Diet of the Athlets. It is in great Quantity in all vegetables besides being added as a Condiment & especially the Farina contains it in very large Proportion even prepared & can by a Process almost entirely be converted & I am apt to think that Farina is nutritious as it contains Sugar & I imagine the true nutritious Matter is Sugar combined wth Oil. We know that they do not unite in the Body when not joined before they are taken in.

In this we should expect that the Degrees of Nutrition of Vegetables should depend & from this a Scale of the different Aliments may be formed.

1st lowest I would put the succulent herbaceous plants as Spinnage. 2d succulent Roots. Turnips. 3 mucilaccous Fruits. Cherries. 4th sacharine fruits Grapes.

5 These Dried. Raisins. 6 Farinaceous Roots, Potatoes.

7 Pithy wh we have only one. Sagoe. 8 Farinaceous Seeds. Rice &c of a higher Degree than the Cerealia stand-

9 Leguminous Seeds, heave higher 10 Nuts of an oily Nature

Almonds & lastly it Pure Oil itself from the Olive as a Fruit & several Seeds.

The only Instance of an intermediate Element is Milk, it is animal in some Measure but is from the most immediately received vegetable Matter & from analysing it we find an Acid easily evolved of a fermentative Nature containing a great Deal of saccharine Matter & a great Deal of Oil is diffused in it tho the Stand before their proper Union. It has also a great Quantity of Lymph united with it fully formed. In this intermediate Element we have also a Scale of Degrees of Nutriment. If you separate the Oil from the Lymph, you have serum nearly the lowest Step of the vegetable Element. A higher Degree is got from Whey taken from entire Milk. The serous & the coagulable Part in Butter milk gives another Degree & this depends on the Manner it is taken, as the Milk was erroneously deprived of its Cream or not. Milk itself, higher still Cream & still higher here Butter. As the cheesy part is chiefly animal lymph, it is the most nutritious of all especially if taken from entire Milk.

I next shall consider animal Food.

Here we have Difficulties of setting Limits I begin as at Regard to Vegetables they are all capable of affording

Of

Of the various animal Aliments

Nutriment & we only reject them improperly as containing Poison, as the Case is from Insects, Worms, Reptiles & Amphibia. The Variety of Animals extends to 6 Classes. The carnivorous Animals are now generally excluded tho they have been used at Times. We find that there is a Degeneration takes Place in our Bodies from the lowest vegetable Aliment to pure animal Matter. We can retain Vegetables in our System longer than animal Food & especially carnivorous Animals & especially the mammalia & Aves of them. Next we should chuse those who naturally live on vegetable Food alone. then those who can live on either animal or vegetable & rank them as we hence confined to vegetable Food alone. last the carnivorous. those that live entirely on Vegetables are least alkalescent & in the Degree according to the Nature of Vegetables. 1st those who live on succulent Vegetables. 2 those that live on Grain the Acrudes many of them more grateful to the Taste & perhaps more nutritious. 3. the Exercise they employ renders them more alkalescent & is the foundation of the Cars ferina as the Deer differs from the Sheep. The Animals may differ in this Respect tho the Circumstances are all the same as the Goat & Sheep. There is besides this a Difference of their Juices more or less perspirable. Fish are less perspirable than

than other animal Food as Birds. Young Animals less than old & they have been thought more nutritious, they are of slower Digestion in the Stomach however as may often be seen from weak Stomachs. I think this may be explained from our Aliment undergoing a Change to a calorie. Fat & more or less difficult Evolution of it to fit it to pass off by the secretion I imagine may make the Difference. I must now speak of their Use to supply deficiencies. Here I might enter on the whole Extent of Dietetics, but it is too large & I shall only speak of them as Remedies for particular Deficiencies.

The general Effects of the Nutrientia are to fill the Vessels by supplying the Quantity of Fluids, & the chief Effect of this must be to increase the Tension of the System, wh you know greatly encreases Strength & it must by dividing the Blood vessels & Heart prove a considerable Stimulus to the whole System, & also they produce these Effects by operating directly on the Stomach, wh affects the Tension of the Whole so much by stimulating it more or less they also stimulate the whole System. This is the general Operation of the Aliment but it is difficult to explain when we consider it more particularly.

The Action of the Stomach seems to cause a Fever in

the System in every particular first producing a cold
or chilness, in some Degree & then a hot fit. This I think
is caused by the Action of the Stomach wh causes a greater
flow into the Stomach & in some Measure into the whole.
This may be in a great Measure from its Distension, but I
think it must also act from its Stimulus as an acrid as
we find the Fever vary from the Nature of the Food.
It is greatest after eating animal Food. Both animal &
vegetable Food contain saline Matter & this is evolved
in Digestion but this saline Matter appears considera-
bly different in its Power of stimulating the System.
The vegetable food contains acid substances very dilute &
possessed also of some Degree of a sedative Power.
Animal Substances contain a more stimulating saline
Matter & that evolved too in a great Measure.
I would carry this further & say that the Difference
in the stimulating Qualities distinguishes the several
animal Foods from one another, the old from the young.
The old have it most evolved & in the same proportion
should stimulate most in the Stomach. This agrees
also with the Time required in Digestion & I think the
saline Matter must have a considerable Influence in
modifying Digestion & we find that animal Matter
advancing to a putrefactive State, excites it more quickly

Ca

Cases where Nutrientia are required than any other. In weak Stomachs of chlorotic & hysteric Women we often find roast Beef easily digested while a Chicken will remain for twenty four Hours in the Stomach. Along with this I think it is probable that the Stomach is endowed wth Irritability according to the State & Progress of Digestion & that the different Degrees of Ferment gives a peculiar Stimulus & different State as to most People we find that give a greater Sense of Distension & Weight & more thirst than Beef. - This is too extensive & difficult to be applied to all different Aliments. The Nutrientia are to be employed as Remedies where there is a Deficiency of Fluids which may happen from —
1st Evacuation from Labour. 2 Diseases consisting in encreased Evacuation. 3 Interrupted Supply when the usual Evacuations continue. 4th Impeded Assimilation commonly attended wth encreased Evacuation. —
There are some Cases not to be removed by the Nutrientia alone, as where the assimilating Powers are much weakened, the various Cases of wch I cannot point out. This to be known by want of Appetite for Hunger always appears to be a Consequence of finished Digestion. This is our Guide especially if attended by Aversion, Disgust or Nausea. In these Cases giving Aliment is generally lost Labour. It may justly be made a Question whether

or not we should ever force Aliment to be taken when there is no Appetite or even Aversion. I can easily conceive a Case often mentioned by our good Women where the Stomach is distended with Flatus & where forcing down a little Food as they direct may either expell the Air or cause its Change & Reabsorption & there may also be other transitory Affections that a little Aliment taken down may remove & appetite be produced: What they are I cannot venture to say. A more considerable Case where Aliment is forced is where there has been considerable Inanition & the Cause of it still subsists, here our Advice will be instaneous whether the Cause produces improper Assimilation or not.

All these occasioning Inanition & weakening the chylopoetic Viscera have a considerable Effect in both Ways, but the Cases of Inanition subsisting with the Cause attended with encreased Impetus, such are the Cases of Fever, Inflammation & Hæmorrhage, & also it may happen in the Case of encreased Impetus depending on Laxity. In this Case especially where Inanition depends on encreased Impetus, it is that the Choice of Aliment is necessary. We cannot long delay the throwing in of Aliment & must use that wh stimulates least choosing the vegetable & avoiding animal Food.

Here we necessarily suspect a Cacochymia which might be conceived in several Cases which I believe rarely ever occurs & only requires a Choice of Aliment which I imagine is here the principal or only remedy & that it is this & not abstinence from food that is required.

With Regard to the Administration of Aliment there are but a very few general Rules necessary. It must be accomodated to the State of the assimilating Powers with respect to our Strength & as they are more or less impregnated with assimilating Ferments & there is no Case of Weakness where the assimilatory Powers are not in some Degree weakened & we should first give a small Quantity of Aliment & then encrease it & this Rule is more forcibly established if we attend to the whole System.

The State of the Vessels is soon in some Measure accommodated to the Quantity of Fluids & when there is any Deficiency you cannot restore the proper Quantity all at once. All the other general Rules respecting the Choice of the Aliment are either to be drawn from what I have said above or from a full Detail of the Materia Medica.

B This is not accurate with regard to System I have

Of Roborants for Laxity

not given a compleat set of Indications & this is the only chirurgical one. It is of little Consequence & I could not treat it without entering on the Doctrine of Fluids. This is a very complex Indication & I confound it to its application to the simple Solid, but it is most generally applicable to the solidum vivum. The Remedies for this are very various & we cannot speak of them till we have considered the Cases to wch they are applicable.

1st The State of the simple Fibre may depend on the original Fibre giving Laxity.

2d It may arise from the different Proportion of solid & fluid: (this might perhaps comprehend the other) & arises from various Causes as applied in a Nutrument or from weakness of the exhalant Vessels or from viscous Humours applied without from Inundation & lastly the proper Degree of Solidity being given it may depend on Tension or Pressure. As the same occurs in the moving Fibre it may be referred to two Heads

1st Atonia. 2d Palsey.

1st Atonia arises from a Cause acting on y moving fibre itself

2d Palsy arises from the moving Fibre being weakened from Causes intervening the nervous Influence from the Sensorium.

From these Cases the various Roborants are indicated

and here I invert the Order of the Causes & say that in Laxity the Roborants must be Stimulants.

In the Case of Atonia we see that it may depend on a Laxity of the simple Fibre & depends more particularly on want of Tension & perhaps on some other Causes we cant explain as the Operation of Sedatives & this is to be cured by all Means of restoring Tension partly by Exercise, partly by Cold & too great Heat is one of the most frequent Causes. Lastly as depending on want of Tension it may require the same Remedies as the Case of Palsy. Exercise is one of the most powerful Means & all Medicines that condense the Solids as the Class of Astringents.

1st The Use of Stimulants. 2d The various Means of giving Tension. 3d Exercise. 4th Cold. 5th Astringents. The three last are what I am to speak of here.

1st Exercise is also to be considered as a remote Cause of Disease & therefore I shall speak more generally of it here.

1st It is plain that the Function of our Fibres depending on Flexibility or Elasticity depends on the mobility of the Particles on one another & this is in a great Measure regulated by Exercise & of Consequence it

strengthens the System.

Our Solids are formed of Fluids & therefore the Nutri:
ment must be in a Fluid form, but there are extra:
ord Powers that encrease the Density & Strength.
The growth of the Body is always accompanied by
stretching Powers & as it acts on elastic Bodies it
gradually gives more Firmness & Cohesion & of course
greater Strength. Exercise is the chief condensing Po:
wer, along with Exhalation which it encreases by pres:
sure from Motion or the Distension of the Vessels has
also considerable Effects. It is also probable that
the superfluous fluid is exhaled by the Power of
Heat & this is greatly encreased by Exercise, so that
all these tend to shew how Exercise strengthens the
simple Solid Organs as they use Exercise. This affects
particular Organs, but the general System must be
rendered dense by the closeness of the cellular Texture.
This is especially brought on by Exercise as is the
Cause of the Rigidity & sometimes Ossification of the
Arteries in old Age. While Exercise has these Effects on
the simple Solid it also has considerable Powers
upon the moving Fibres as a Stimulus. Formerly

said that Repetition of Motion facilitates the In:
flux of the nervous Power to that Part & by Custom
also the Effort becomes greater & it must in time
strong than the Tonic Power over the whole System, & the
ready Influx of nervous Power. Exercise also expedes
the Circulation & exerts it over the whole arterial & pul:
monic Systems, & this especially affects the extreme
Vessels & merely by the force of Impulse This is en:
creased independant of the Quantity of Fluids & this
must promote all the Excretions & Secretions, by wh
Exercise not only strengthens the Solids but supports
& induces the proper State of the Fluids, hence is the
chief Means of preserving Health & a principal Re:
medy in the Cure of Diseases. It is forbid in an ex:
creased Impetus of the Blood, unless to a particular
Part & that internal wh may be remedied by Exercise
determining to the Surface, but independant of
this it may be carried to Excess, produce too great
Impetus of the Circulation, Haemorrhage & various
errores Loci. But when carried to excess also it may
weaken the Muscular Fibres as that when employ'd
to strengthen the System it must be within these

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Bounds. In obstruction of the Fluids it may be a considerable Remedy, but the Objections to its Use are more remarkable are more remarkable against the destructive Effects of it. It may produce spasmodic Effects, which may make them more obstinate & we know that whatever encreases the nervous Influx is always followed by Languor & therefore it must be limited on this Sect. Hence its Limitation & the Difference of the several Exercises we employ. The voluntary Motions, bodily Exercise principally produce Languor & bring on encreased Impetus by expeding the Motion of the venous Blood. There are other Kinds of Exercise nearly independant of the Action of the Muscles got by the various Kinds of Gestation as Sailing, going in a Machine & Riding. The chief Effect is here by the external Pressure & this affects the Circulation principally, for tho the Body appears seemingly at Rest, when the Motion is equable, yet when it stops we find the Determination it has to go forward. This greatly affects our Fluids & on the least Variation of the Motion

the fluids may be found to be impelled. This occurs more or less in all Gestation & from this I imagine they act so much as deobstruents & overcome obstructions as much by determining to the extreme Vessels & along with these for the most Part some Degree of muscular Motion concurs. The Effort is gentle but constant & can be borne longer than bodily Exercise.

2d Cold. As acting on the inanimate Matter, condenses it, but this only on the Surface & not considerably; next it condenses the fluids & allows the solids to contract by this Means & to this I would add its Condensation of the nervous Power which must give the whole solid Parts more density. next its Effects are still more considerable to our System as sentient to which it acts as a constant Stimulus & from this it produces its full Effects in the Contraction of muscular Fibres. The other Effects of Cold are secondary, its Effects on the Surface are propagated along contiguous Membranes & the Tension of the whole is increased & also its Stimulus is continued over a great Part of the System particularly along the whole sanguiferous System, whose Action we find it often excites & from this & from its increasing the Tone it promotes Perspiration & all the excretions & also gives Activity. There seems to be

a nervous Communication propagated whether by Tension or Stimulus by which the Application of it to a particular Part to a finger may spread its Effects over the whole System & produce a general Stimulation. This seems to be connected merely with a Sense of Cold as after the Body is of the usual Heat when tried by the Thermometer. Cold is a Stimulus to excite the Energy of the Sensorium & thereby the whole System. The Motions of the System have said are more directed by final Causes than we can explain & Cold by this occasions a Reaction of the Sensorium which aggrates its Effects & this not only gives momentary Tension but invigorates the System. There is however something more in the Effects of Cold than I can explain. The Tonic Power depends on the Density of the solid Matter of our Nerves & especially of the Ether. If the Elasticity is encreased with greater Rarity, it does not answer the purpose but gives Debility & there must be a certain Balance of Elasticity & Density from Cold & it is therefore the most proper Stimulus to our System & this should be much above at times that State of. for we find agreeable greater than the Cold of our Bodies always. Heat debilitates Vigour & lessens the generating Power as is seen in warm Climates. The Use of the Application of Cold is easily understood from the foregoing Principles of its acting

as a Sedative & hence destroying Life if in too great Degree of its Producing Constriction hurtful if not followed by Heat, so it is always unsafe if it does not stimulate. If it is much greater than the Degree of our System, it must be transitory to [illegible]. All this applies easily to cold Bathing not so to cold Air. In Hæmorrhage we know how necessary it is to keep the Body cool, as Heat induces a Delicacy but the Degree of Cold is not ascertained tho they are now trying it in the small Pox.

3. Astringents are a Set of Medicines whose Uses are ill ascertained but I shall mention some Facts with regard to them & some Conjectures thereunto.

I suspect that Astringents are such Matters as coagulate a Part of our Fluids & act on the Solids as of the same Nature. They may be reduced to three general Heads viz 1st Alcohol 2 Acids 3 Styptics!

The coagulating Power of Alcohol is well known & also its hardening the Solids. It is applied externally to harden the Surface & strengthen. Cicatrice. I know of no other Use to the simple Solids. It acts also to the moving Fibre as a Stimulus & Sedative.

2 Acids coagulate Fluids & harden Solids & have both a Stimulant & astringent Quality. When they act as astringents there is probably a Diminution of Activity

of the nervous Power, & then they act as Sedatives, but in a certain State they dissolve animal Substances & stimulate more than constringe & must be more dilute to raise Astringency. Both alkohol & acids have been reckoned powerful Astringents from their stopping Haemorrhages but this is found rather to be from their coagulating the Fluids & forming Thrombi in the patulent Mouths of the Vessels rather than constricting the Solids.

3. Styptics are of various Natures more than we can speak of. Acids combined with a certain Earth that dont neutralize it entirely forms a Styptic. Of this Kind is Alumb & it has led to a false Notion that all Earths combined wth Acids form Styptics, but I know of none else of that Class & on the Contrary they dissolve the Blood & if ever they have appeared astringent it is from their stimulant Cause if they are exactly saturated.

Most metallic Salts have similar Effects to Alum they unite wth Acid & give it a degree of Concentration & thus partially saturate the acid coagulate animal Fluids & may seem astringent & it is Since that some of them form powerful Stimuli. The Astringency also appears in Acids joined with Lead & Iron.

Stimulus alone appears from Silver, Antimony & Mercury & a Heat Operation from Gold, Copper & Zinc

The Effects of Iron & Arsenic are not sufficiently understood tho the astringency indeed appears in Iron in some Measure but is combined with the strong Acrimony of Arsenic. Acids appear to enter the Composition of styptics as styptics have been held the vegetable Acerbs their Acidity corrected but by what Means is uncertain but we know that it is acid concentrated & fixed in solid Matter. Austere Vegetables are sensibly styptic tho without perceptible Acidity but when we consider how easily the acids pass into the austere we are led to think that here an Acid is combined with some Earth & it may be enquired whether or not Acid is not always the Cause of Styptility. The vegetable astringents are known by their absorbing acid from Metals. They bring Iron to a Black Calx & are hence the Foundation of Ink. These Saline Acids operate on our simple Solids but not perhaps very considerably for there are Doubts if something else does not concur with the Operation of Styptics, in giving Density as in Tanning of Leather. Great Pains is taken to retain the cellular Texture but away the Oil. If we could not determine their Effects in any other way but the simple Solids we should find them of little Use but they operate also on the sentient

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Parts. A small Quantity of Alum or Saccharum Sa:
turni applied to the Tongue will produce sensible
Constriction over all the Fauces, Whereas Decoctions
impregnated with them or astringent Vapours do little
I imagine in Part from their fluid Form, in Part from
the Surface being lined with Cuticle & only act con:
siderably on the tender Parts as the Eyes, Mouth &c.
The Theory of their Operation internally is uncer:
tain as we cannot suppose that the small Quantity
carried to the Vessels can have much Effect in Hemor:
rhages & any Effect they have must be from their Topi:
cal Constriction propagated to other Parts. The Sto:
mach is the most proper Organ for this as so much
connected with the System & here the vegetable
Astringents have small Effects compared with
the Fossil. On this footing the metallics have been
called Narcotic, they are not Hypnotics like most
Sedatives but have an Operation sui Generis which
remains to be explained.

Astringents are strengthening as changing the Ten:
sion but in a higher Degree sedatives & pernicious.
Astringents often give Constriction that prevents re:
currence of Atonia that would occasion Spasm &

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Convulsion. The Operation of Bark thought generally specific certainly produces Effects in this Way but there are other Powers joined & thick evident. Tis surely astringent & other substances shew the same Effects, but this is not all, for those Medicines which have the Power of Bitters as well as astringents have not its Effects & yet the Ague was cured before it was known.

One Difficulty remains with regard to Bitters, they certainly strengthen but do they act as astringents or not. If they act as Astringents it greatly embarasses our Theory & we have difficulty of supporting that they act as stimulants.

They affect the nervous System produce a strong Contraction where they are applied & invigorate the Circulation hence they act as Aperients & destroy the ents as well as astringents. This appears to be according to their Degree but there is considerable Difficulty both in Theory & Practice. If Sacc: Sat: is given to stop Hemorrhage internally the only way we can suppose it to act is by propagating a Constriction from ye Stomach to that Place but we should think that it would affect the whole Vessels equally & produce great Change in the Determination this can not be obviated by any sedative

Power but probably it may effect chiefly the Part wh has a great Degree of Excitement. If Hæmorrhages are merely passive depending on Relaxation we see how they may be of Use but Evacuations are most commonly from encreased Impetus & then we see they may be hurtfull but may they be applied externally. If the Evacuation is violent we must hazard something but it certainly endangers encreasing the Disease over the System & was in the Part & it is always dangerous to interrupt the natural Determination, but they have sometimes been found of Service & I think this may be explained. There is I think no Case of encreased Impetus that does not act by Exacerbations & Remissions as a Bleeding from the Nose is often a Symptom in the Hot Fit of an Ague & a regular Hæmoptoe is sometimes cured by the Bark on the same footing as an Intermittent is so in excessive Menstruations when uterine Hæmorrhagy & Fluor albus, Exacerbation & Remission appear & I think they may be of Service & only have failed from our employing too small Doses.

Of Emollients

Emollients may seem the converse of the other & appear to apply to the simple Solid & moving Fibres, but the relaxing the Tonic Power of moving Fibres to the Sedantia & anticspasmodica & here only consider the Means of relaxing rigid simple Solid. The Means are always either 1 Water 2d Mucilage & 3d Oil. I know not if there may not be a Head of Means of dissolving animal Solid, but it is too subtile Water is by far the most powerful & if we understand the Operation of one we understand the other too, which are less powerful but more durable. Water enters into the Composition of animal Solid & according as it enters they are more or less rigid as appears from many Experiments especially Dr Bryan Robinson's. Two fluids relax more than cold Water by him it is as 35 & the other as 38. & Warm Water relaxes as 78 & hot so much unless Ac. Vitr. which destroys the Substance, hence Water is the greatest if not the sole Emollient & all act as impregnated with it.

I here consider its Effects as applied to the Whole Surface in warm Bathing. It consists of two relaxing Powers in its Operation, Moisture & Heat. the last

not solely as absorbing every Mendruum. It is
just suited as dissolving animal Matter, to clean
the Surface from Mucus & sebaceous Dirt as very apt
to concrete with Dust & Sweat the Perspiration & also
are apt to excite many cutaneous Eruptions hence
they obstrate & cure many Diseases.
Water absorbed by Heat not only dissolves & washes off such
Matter but insinuates itself into the Cuticle & relaxes it.
If this it went no further from affecting the subjacent
Parts, it might affect the whole System from the Connec-
tion I have mentioned. In this Way the Effects of
the Relaxation may be very great but they are more
confined a Number of Nerves being expanded below it.
Not only act on them as Organs of Sense but as com-
municating with the rest of the System & may be con-
sidered as soothing the Other & relaxing the whole
System. Probably another Consideration is to be
included as far as this Relaxation of the Other is pro-
pendernational it gives a clearer Sensation & we have
considered its Effects by withdrawing the nervous power
from the Convulsion which may be restrained from
Anxiety Delirium &c & then the warm Bathing may

induced the unexcited State necessary to produce sleep. The Effects however are not confined to the nervous System but affects also the sanguiferous System. It is applied to the extremities of the Vessels, relaxes them & occasions a considerable Change of Determination & the Relaxation is propagated a Considerable Way. It is despatched now far it penetrates. I think from the Relaxation of the Cuticle it may affect all the subjacent Parts even the Ligaments & Bones. It may also be applied to the Abdomen affect the Intestines & Viscera & remove macrodic Affections from them.

The Application of Heat I have also said rarefies the Fluids considerably more than it relaxes the Solids & hence it may increase the Tension & Impetus & the Heat of warm Bathing is found hurtful in the Cases increased Irritation. I must say that the stimulating Powers are very considerable but are safe as accompanied by a relaxing Power but this also may take Place sooner than the relaxant, but if so tempered as to come on nearly at the same Time & are moderate they can have no bad Effect & besides this the stimulating

Powers are more transitory than the relaxant. These Principles would be illustrated by an Application to particular Diseases but we have not Time for that wh have given also the Principle in its mode of Application. I think a little below the human Heat is the proper Degree to obtain the increasing Powers have no bad Effects from its Stimulus but we have no Experiments to determine its Effects higher & applied for long Time, 2 Hours as in France speaks of. I am uncertain how far it may produce relaxing Powers when much continued as we find in warm Climates it is very constantly used & was especially so by the Antients without any bad Effects & its use in promoting the Principal Functions is very obvious.

Now proceed to consider the Indication of exciting the Motions of the System wh is done by very various Means which might almost include all the Medicines. Formerly defined Stimuli to be either direct or what immediately affected the moving Fibres or indirect wh affected a Sensation & this that means a Sensation of Uneasiness,

Both these may be found to take Place in the sanguiferous System, but I always have declined entering on the indirect tho I find it as a frequent Cause of Fever but I know not how to excite Fever at the proper time or in due Degree when to do it I could & I shall now consider the direct in this I have before pointed out the several Powers that may be thus employed.

1st Every Impression producing Sensation. These are numerous & of great use with regard to the Conduct of Health & there is an Indication afterwards to ascertain when they are to be removed but they are seldom given as Remedies. Most Impressions not accompanied with a reflex Sensation are seldom given & rarely taken away in Disease. The others are rarely employed nor are more of their Operation as they act so variously on different Persons & are very various as the Degree & Motion thus excite from the former Habit. They are frequently Remedies by Accident but are also Potentia nocentes. Opium sometimes cures a Pain, but also often proves fatal. A Physician by Experience of a Patient may perhaps apply them, but for this no Rules can be given;

also pass over Motions in the Sys. for that prove indirect Stimuli as included under Exercise & some of them that come under Sedatives. Then come to the Use of Medicines whether as stimulating the Stomach or the Sys. tem in general & that I have spoke of already.

2 Tonics

3 Exercise as tonic & stimulant

4 Cold as a Tonic & Stimulant.

5 Heat as a Stimulant.

There remains Electricity, Mechanical Stimuli & the chymical Acids of which I am to speak.

1st Electricity this is a very subtile uncertain Enquiry & I shall leave it on the footing of Experience. It seems to act most purely on the nervous Power while the others act principally on the sanguiferous. This Power of exciting Motion on the nervous Power makes it proper in a Torpor of it but at the same Time it may prove destructive of life & we know not the proper Limits & I think I have seen both therefore it is always to be employed with Caution as the lower Degrees have ais to expect most of its Effects from a Continuance & at the same Time its Effects are not so entirely mine but it may affect the

sanguiferous system & the Danger I think often arises from exciting it where there is Congestion in the Brain.

2d Under Mechanical Stimuli I include Exercise & all Cases of Impulse. The last is most commonly to be spoke of as affecting reflex Sensation & the only Case I have to speak of is what is called Friction. Thus we can understand in no Way but from the alternate Motion proving a Stimulus to the sanguiferous system & increasing the Determination to the Surface & increasing Perspiration &c. I shall not say where this may be of Service but as particularly so joined with warm Bathing as practised in Asia. I seldom see its good Effects here as we apply it improperly dry where it must be very gentle or very long continued.

3 Chymical Acids or strictly stimulants. Here a great Variety of Matter is employed & we can scarce see the Connection of them & I here entirely trust to Experience as I do not see any Propriety in any of them more than others a priori as Remedies. Physicians have been satisfied by finding the Action of mechanical Acrid but I could easily shew that this cannot apply to saline Matters from a Notion of these Figures taken entirely from their Figures & nothing can be more absurd than that Solution does not depend on Figure & from if Observation

of the sensitive Plants, it is evident that there is an action of certain ætherial Matter very different from any thing spoken of in the Corpuscularian Philosophy & I have hinted at something similar to ordinary Solution of a Union of various Æthers & hinted at these in the Case of Smell & Taste & also that there may be some Cases as we see elsewhere of one Æther repelling another.

Tho we can

1st Every saline Matter soluble in Water evidently is an Acid with respect to us especially the acid & alkali the simple Bodies they corrode the Parts & may be supposed to destroy the Æther united with the solid Parts but the neutrals dont corrode & they must have some different Operation. Some of them seem to act as Sedatives or Refrigerants, some of them more remarkably so than others. Common Salt appears the most pure Stimulus while others of them seem to require a Modification of the Nerves acting on the Stomach

2d A great Number of Oils are stimulants all those that are acid to the Taste or odorous hence most of

Therefore
[illegible]
[illegible]
[illegible]

the essential Oils & to these may be joined the Chemical Productions of the empyreumatic & tarry Oils where the same Doubts lie that do many Chemists say Oil is naturally Bland & the acrimony may be supposed depending on a saline Matter tho it has not been discovered.

2d Resinous Matter. They lead us to think that the Acrimony may always be saline as they in the form of Balsam appear composed of Oil & a saline Matter & in the Class of the Tetradynamia the same appears as they seem to contain a volatile Alkali.

3d Various animal & mineral & some vegetable Substances peculiar. They all seem to contain saline Substances especially the two first tho they are not clearly proved, & as many of these are entirely poisonous it would give us a Difficulty of resolving Sedatives to a saline Salivas

A Doubt remains with regard to Bitters very peculiar. They all contain an Oil but whether their Operation depends on this or their saline Matter I am uncertain & especially as they act both as Stimulants & Sedatives.

The Operation of Stimuli is very extensive both on the Part & the Sensorium & on the whole sanguiferous system. They operate especially on the Part they are applied to & by that on the sanguiferous system & I think it is probable that they act on the Sensorium by the Pain they produce as in the Stomach but some of their Sedative & antispasmodic Effects shew their immediate Action on the Sensorium. to these Effects are so much we are much limited in their Use as we are not certain as to the Degree of their Stimulus & their sedative power. The Volatile Stimuli are mostly topical in their Effects & are momentary, if ever they are general they must in large Quantity & hence frequently repeated. The general Effect of most Stimuli depends on the Topical, it acts on the nervous system but most on the sanguiferous. They differ as their Effects are transitory or permanent. The more they act topically, they are more permanent & less when general, & hence the general may be most frequently repeated. The Topical Effects of Stimulants are Evacuations, as they operate on Excretories & I think if they are applied to excretories

they may all have this Effect in place of the Motion of specific Stimuli adapted to particular Organs only & I think all appearances of specific Stimuli may be explained in another Way. The Chief Use of Stimulants are as Evacuants & we are at a loss for a general Stimulus in Palsy that does not destroy us by its topical Effects. In the Case of Fever where the sanguiferous System is greatly excited before it is removed we should think of the Use of Stimuli, but this has long been tried & commonly of pernicious Effects. If ever they are here admissible we are confined to the more general & transitory Stimuli accompanied at the same Time by an antispasmodic Power.

Sedantia or means of diminishing the force of Motion in the System. There are many more Occasions for this Head than that of Stimulants ten for one. The Powers here are very great but I think they may easily be reduced to three Heads.

1st The withdrawing the ordinary Stimuli from the System.

A Notion has prevailed that our Bodies act as an Automaton: I believe it is true in some Respects, but as our immaterial Part is connected with a material Mechanism it would fall into total Rest were not Stimuli applied. We know that it would never have appeared in the form of a living System had it not been for the Power of Heat & could we withdraw all Impressions & of Consequence stop all Sensation it would soon become a Nonentity as happened to the Dutch Physician who took a Fancy that Sleep was the most favourable State for his System.

2d Various Means of weakening the moving Power of the System whether they require any Impressions or not.

3d Various Means diminishing the mobility of the nervous Power.

The 1st is very various & considerable as by 1st The Element being withdrawn so considerable a Stimulus from their Bulk & Quantity daily required & withdrawing all external Impression which are to be

considered as Stimuli & some of them are almost necessary to the System as Light & Noise. These act as Impressions but especially for their producing intellectual Operations & the avoiding all intellectual Operation is a 3d Head. All these causing Anxiety, & such as are personally interesting & avoiding Excess of Watching which naturally alternates with Sleep. This cannot be without the Impressions I have mentioned. 5 avoiding all reflex Sensations which require the Existence of intellectual Operations some of these are direct Stimuli, others sedative as Fear, Grief &c but act as indirect Stimuli. Here I would add 6 The gratifying of solicitous Appetites of difficult application applied to particular cases of the Gratification of lust took off the Necessity of the System. It ought be placed here but in different Ages it may arise from other Causes & is difficultly made in article of Practice & the same of the Gratification of Hunger & Thirst Throughout in view it must be that the Cardinal Formula and the Gratification of Thirst we can more easily allege to be a Means of diminishing the Motion of Deglution as we can more easily promise on their not being

Stimulant, & they seldom are desired so by the sick here.
Another Means is avoiding muscular Motion w^h affect
Sensation & also stimulates the sanguiferous System as
Respiration & hence speaking & we are next to indulge
Sleep & this we do by a means that ought have been spoke
of under the Head of intellectual Prescription by giving
Impressions of no great force or particular Tendency as
the aolian Harp w^h can lead to no train of Thought &
Lastly avoiding Heat so considerable a Stimulus if
above 62° for then immediately it is felt as a Stimulus
& Cool Air is then a Means but how low this may come
we know not only to ballance the generating Power.
This gives the antiphlogistic Regimen so much talked of.
2^d The Means of removing Tension which I have said
is so considerable as increasing the force of Motion.
This is done by Evacuations not induced by any stimulus
but one we are sure of is the Case of Blood-letting
w^h I think acts chiefly as a Relaxer to be considered in
another Place. Warm Bathing comes in under this
Head in the Degree so as to relax the Skin & prove an
agreable Sensation & some other Impressions contra-

and leading to no Train of Thought. Another are perhaps to warm Bathing is warm Drink internally but they act but little in that Way they remove Thirst, uneasy Appetite & Stimuli from Acids thrown in or generated there or in the alimentary Canal altogether they may when taken up give Increase of Tension but thus relax & from Flexibility increase the Secretions which Obviates this & makes them an Article of the antiphlogistic Regimen not spoke of before.

3d Those that act on the mobility of the nervous Power, they are very numerous but I refer them to 3 Refrigerant, Astringent & Soporific. These are the Medicines more strictly called Sedatives. It is very difficult to find a common Nature in them either similarity in Substance nor Effects.

1st The only Substances to be spoke of as Refrigerants are Acids & Neutral Salts at least of certain Kind as I think some of them are rather universally stimulant. The others Acids are found of Use in increased Tonicity in Fever, Inflammation & Hemorrhage & perhaps some others. This we have as a fact

and I imagine it is by a Sedative or Refrigerant Power as no other Operation seems to account for these Effects. In Acids the Effect might be ascribed to an astringent Power but not in Neutrals from the similarity of their Effects they are probably of near to the same Nature. This Effect has been ascribed to an antizymotic Power or a Resistance of Fermentation & particularly as Antiseptics. As such they might be supposed to operate in the Stomach but from the Quantity they can be thrown in & the Bulk of Matter they are added to I think they can have but small Effect in the Stomach & afterwards in their great Diffusion they must have very small Effect. If they are sedative we must look for another Cause. They are also spoken of as Alterants but the Quantity is too small & Neutrals at any Rate of Acids this Effect could not occur. Of all the Acids offered their dilute the Quality is the best tho we have besides some Roots of a mild & gradually sedative Power as we have the Effects facilitated by taking down Cold Water into the Stomach. They both produce a cold in the Stomach & then a Sweat & we may suppose that cold produces a Reaction of the System & perhaps nauseat

do the same; the Dont say that it is by their producing
actual Cold as they do it when dissolved.
2d Another Proof of their sedative Power is that when
used as Purgatives they produce Flatulency & Atonia
not in Proportion to their Evacuation.
3d The they stimulate we never find it of any Effect
nor propagated any Distance which makes it be
supposed to be counteracted by a sedative Power.
Dr Alexander finds that a Dose of Nitre diminishes
the Frequency of the Pulse, but it immediately returns.
The first points out its refrigerant Power but its
transitory Stay does not explain its Effects in Fevers,
the same of cold Water.
astringents. It is evident that if the Effect of it
is to constringe the Part it must compress & condense
the Ether, it must take off Mobility & prevent the
Effects of Atonia & from this we can explain the Spe
cation of the Bark but it goes further. I used to
explain the Power of Lead inducing Palsies from this.
but I now do not as it does it not only in the form
of Sack. Sat. but in the form of Vapour & even Mercury

does this. I think the sedative Power of several Metals appears singular & can scarcely be referred to astringency. Lapowitzes are the most considerable Head of Sedatives & I cannot say to how many Heads they should be divided but I confine Myself to Opium. It is known to diminish Sensibility & Irritability in the Part & in the whole System & induces Sleep. Hence we say it diminishes the mobility or excited State of the nervous Power now I shall not attempt to explain only say that it acts immediately on the nervous Power & not on the Blood.

1 This I conclude first from the smallness of its Quantity which cannot be supposed a Ferment.

2d From the short Time required for its Operation

3 It operates on Parts entirely removed from all Connection with the sanguiferous System as on the Heart of a Frog cut out of the Body.

It is particular suited to allay Pain from its diminishing Sensibility & Irritability being diminished by it makes it fit for allaying Motions & increased Secretions.

It is however a Stimulus also & from this I would account

for its producing Delirium & the spasmodic irregular Motions in large Doses. To account for these two different Parts in its Composition have been supposed but this is contrary to all facts in Chymistry & I think it is more easily explained from a Reaction being produced in the System. Its stimulating Effects are [illegible] & it leaves the system in a State of Debility tho its Variations are in some Degree transitory but there is a State of Atonia comes on wh disposes it to be affected by Stimuli & to spasmodic Contractions. It is a Remedy in many Diseases but as many of its Effects are opposite it is uncertain & either of them may be carried too far & as the Effects are followed by bad consequences they are all embarrassed w Difficulties in its Operation. I shall endeavour to obviate these & consider it as a Sedative

1st It is as a Sedative indicated in increased Sensation & increased Action but here must consider the abuse of increased Excitement & this is always to be referred to Stimulus & is oftner to be cured by removing the Stimulus

than diminishing the Effects of them. Opium must therefore be according to the State of the Stimulus present & to its mixed Effects. Opium is forbid in the case of a permanent Stimulus in the Body especially where the sanguiferous System is excited & there is a determination to the Brain. Then it is not only likely to be ineffectual, but is apt to increase the Power of the Stimulus. This of Opium not being admissible in Fever is one of the most general Rules in its Exhibition in Cases of Inflammatory Diathesis, & particularly where there is topical Inflammation. It is also improper in the excited State of the sanguiferous System frequent in Hemorrhagy, but is this always to be observed. it may sometimes quiet Pain in Inflammation & the Effects of the Mind in Hemorrhage but in fact we don't find it useful or allowable. Its Effects are always more or less transitory & after its Operation is over the Secretion of Inflammation & Hemorrhage remains are apt to return with more Violence which I think is to be ascribed to its

giving a greater Irritability to the System & allow
the former Stimuli to act more powerfully. In this
Pathologists suppose always that its sedative Power
relaxes the Blood Vessels & allows the Expansion
of the Blood wh may perhaps occur & will add to
the former Effects. There are however Cases of
Topical Inflammation in wh Opium is of service
but there is the Cases of truely topical Inflammation
unattended by general Fever. We are sure of some
such Cases. In Rheumatism where there is general
Fever I only find it gives a momentary Relief & ag
gravates the Disease. But when there is no Fever &
the Pain is purely topical & permanent in the Part
then I think Opium is of the greatest Service as is
also the Case in the Lost Back without Fever. I think
also it is of service in many Hæmorrhages particu
larly of the uterine Kind wh are often from the State
of the Part without any general Fever
I will go further & say that Opium is admissible when
there is a topical Stimulus as Calculus in the Urinary

of Biliary Ducts. They excite often general Fever & always Inflammation. Blood letting is often required but always find Opium safe & useful as relaxing of the Spasm of the Duct & allowing the Passage of the Stone. This is an Exception to a good general Rule given by Dr. Young.

It is again a very general Rule that Opium may be employed where the sanguiferous system is not excited but this is too general & I shall consider it under 2 Heads.

In Pain or increased Sensation Opium gives Relief, but it is only temporary unless the Cause be removed but the Pain may exist after the Cause is gone or may be excited by Opium as in the Case of Spasm. Again in the Case when there is an Effort by Nature it may be of Service as in Calculus the Fluid will operate in expelling it during the Digestion of Pain is also proper when there is no Danger of an increased Impetus of the Fluids or a Rarefaction & this restrains it as in the Cases of Hemorrhagy. If the Pain is violent

of from a permanent Cause we think we are obliged to give it to give some Relief but it must be when the sedative Powers are considerable & the Stimulus small as is the Case in Cancer. I don't think that the temporary Relief compensates the Aggravation of the Pains afterwards. It has noxious Effects also that resemble it as it inebriates, weakens & disorders the intellectual Functions: to this an Observation of Dr Young's is to be applied that in Cancers it had the Effect of doing this & increasing the Pains at last. The Cases in which Opium is indicated are general 1st Relating to the Functions of the Sensorium itself — 2d Increased Motion from the Condition of the moving Fibre itself in the Organs of Motion.

3d The same in the moving Fibres employed in the Functions. As to the first I need not say that it is excluded in Phrenitis & ordinary Delirium but I speak of Mania. Where some speak of it as highly pernicious & others as the only effectual Medicine we can give. I will compromise this & say that whenever there is full pulse & frequency of Pulse wth the Appearance of the

Delirium ferox it is improper but since there are
none of these or especially where they have been removed
I think a full Dose of Opium is greatly to be depended
upon & we should employ it so as to get its full sedative
Effects & mania requires a very great one & from the
observation of Dr Pitcairn & others say on this I always
find the good Effect arise from it when it produces
sleep & given sometimes to the Quantity of gr XV in
the 24 Hours
2d Increased Motion from the moving fibre etc. eff.
This includes Convulsion & Spasm & I observe that
whenever these continue for any length of time they
are of service as in Epileptic Fits we often find not time
to give them as we know in Tetanus.
The only Cases of these in ch. we are acquainted in
are the Cases where there is Palsy or Fever.
In the first the Excitement is diminished & in
the other I have already spoke of.
This of Use in the Repetition of such Disorders de-
pending on Atonia which not easily explained & re-
mained to say here that Opium when it takes off the

excitement of the System may operate as bad & give a more firm excitement & a more durable Tension. Which this probably occurs where the stimulant & sedative Powers concur tho of this I am uncertain but of the first Operation of it should come in when the Atonia should occur & of the Atonia comes on, when the sedative Power is ceasing of it may encourage the Disease as we sometimes find the Case in Epilepsy where it is apt to induce Palsy unless given at the exact Period when the Returns should happen & is particularly pernicious when from a permanent Cause.

3 Increased Action in the moving Tubes employed in the various Excretions. We find that Fever can lessen the Action of the Vessels & diminish the Secretions but cannot be given when connected with Fever of the excess State of the whole System as is the Case of sweating which is difficultly & commonly at longer approached by Fever & is commonly increased. The Case is when the Evacuation can only be thrown out

that Excretion & when the Stimulus is accumu-
lated as is the Case in morbid Matter in the Intes-
tines as is the Case in the first Stage of Cholera
where there is so great a Quantity of Bile in the pri-
me Vie. There is a Doubt when it should be
employed in Dysentery. I think this Disease
is always more or less founded on Fever & when
it is attended w^t Fever at the Time it is improper.
Again if it is considered as depending on Acrimony
in the Intestines. I imagine this should never
hinder its Use as it alleviates Pain, takes off the
spasmodic Constrictions of the Intestines & I think
the Operation of Opium is very different from other
astringents as its Effects are more transitory & it
does not while it eases Spasm stop the Peristaltic
Motion of the Gut or the Excretions from them. & I
imagine the common Source of Acrimony is the Energy
of the Secretion of the mucous Glands of the Intestines
I think it would even remove this as we find often in the

case of Cough where an acrid liquor is poured forth by the use of Opium it is retained & becomes more bland. Besides this in Dysentery I think the spasmodic Constrictions often retard the solid Parts of the Faces when the Mucus passes by stool which is the Cause of Sympto. I think this is cured by the use of Opium. As suppressed Evacuation often arises from a Spasm in the Excretories & so Opium may be a means of inducing suppressed secretions as well as restraining a superfluous Discharge.

Many People labouring under a nephritic Fit have the Pain stop when it passes along the Course of the Ureter tho no Stone is voided but a Strangury is generally brought on which must be from the Stone having found its Way to the neck of the Bladder & proving a Stimulus. Opium given here allows the Urine to be accumulated & often the Stone is passed along with it. With regard to the stimulating Power of Opium, it is clearly proved from Experiment & may be said wherever the exciting the sanguiferous System

y allowable & where we fear no Harm from its
edative Power as we do in the Case of Paly.
tra Cordial however I think its Use must be con-
fined to those who are accustomed to it Use as we can
from the large Quantity given at a different Time.
This is rarely practised in this Country, but Wine
is used in its Place. It has been given to cure
Intermittents & its Effects ascribed to its Stimulus
but I rather think they are so from its Vibrating
Motion & by that removing Spasm & I think its Use
by People called of a nervous Habit is to be ascribed
to this & I imagine it is rather from its sedative than
cant Effects.

These are Medicines wch are designed to remove irregular Motions in ye Moving Fibres. It is a very difficult Indication as we are yet much in ye dark concerning the Cause of Spasm upon ye Acc of our knowing so little of ye Organization of Muscular Fibres. What I have to say therefore shall be delivered in few words.

1st Spasm consists in an Incap of Contraction. whatever removes these Fibres further apart will prove useful such as Heat & Moisture.

2nd In Spasm there may be a State of Immobility in the Nervous power

Every thing therefore wh recovers the mobility of the nervous power will prove Antispasmodic.

3rd Spasm often depends on an Over-stretching of Muscular Fibres. the Cause of Inflammat.n can only be derived from this. this wh Congestion wh attends it sufficiently prove. Blood letting removes this. & thus proves Antispasmodic.

4th Spasm depends upon Stimuli, acting on particular parts. Whatever therefore removes these will act as Antispasmodic, such as all sedative medicines.

5th Spasm arising from Cause 4th & often cured by exciting a Stimulus in Another

part of the Body or by exciting some Passion of the Mind. May not Bitters & Cauterics act in this way only?

6th. Atonia often lays a Foundation for Spasm. Adstringents remove this Atonia, & thus prove Antispasmodic, either applied universally or topically according to the Seat of the Atonia.

7th. Spasm depending on Causes 6 & 7 are cured by Stimulants externally when it is seated in the Alimentary Canal we prove their usefulness in those Cases from Flatus being discharged (which always arises from Spasm) immediately after the taking of Antispasmodics. The

Expulsion of flatus is in some measure a test of an Antispasmodic Medicine. all Antispasmodics you see here are reduced to Sedative & stimulating. the most powerful Antispasmodics are volatile Oils such as the Empireumatic Ether - Camphor Musk Castor w.ch contain an Essential Oil on w.ch their virtue depends. Alcohol proves Antispasmodic from its sedative virtues. what is volatile Alkali? I am at a loss to determine which of y.e two Classes it belongs to. most of Antispasmodics are a combination of Sedative & stimulat.g Qualities.

II. De Morbis Fluidorum.

The Pathology of ye Fluids is involved in great Darkness. I can therefore offer only a few Conjectures on them. They are of but little Consequence & are in general more or less connected w: & dependant upon the State of the Solids. we are acquainted w: the Two Medicines that Operate on the Fluids primarily. I shall therefore discuss them shortly.

When the Fluids are too viscid Attenuating Medicines are indicated. but how is this viscidity produced & in w: Cases does it take place? For my part I know no

proof of Lentor in the Blood. if it ever does exist it must be in ye Coagulable lymph. but we have no proof of such a viscidity even in this part of the Blood. The natural Consistence of the Blood may be defined by water, but in ye Body I doubt whether water ever acts in this way, for it always runs off as soon as it is poured into ye System according to wh I said before. Neutral Salts have been supposed to thin the Blood, but when a Salt superabound, in ye Serum it may induce a morbid Tendency of them, but I believe Saltness can be introduced into the Body in sufficient quantities to attenuate the Blood. how absurd is it

to suppose ℥ij of Nitre given in 24 hours (for no Stomach can take more in that time) can thin several pounds of Blood? Little of it mixes w.th the Blood, but is washed out as fast as it is taken in. Great Common Salt dissolves the Blood. This we prove from the Juice & Phenomena attending it, but w.ch are the Diseases w.ch require such a Medicine? & who would submit to take it in sufficient Quantities to produce such Effects? Soap is said to dissolve the Blood, if it does it must be by forming a neutral Salt w.th the Acid of the Stomach, for Soap never enters into the Blood in an unpounded State. Alkaline Salts are the

most powerful Attenuants we have, but these are seldom introduced in a sufficient quantity to thin the Blood. if they were they wd be neutralized like Soap in the Stomach. Here I wd observe that many have supposed the Attenuants dissolve Concretions in existing bufsels, such as the Stone in the Bladder. perhaps the Alkaline salts, after being diffused may again be concentrated in the Urina: passages, & thus dissolve stony matters, but we have no Reason to suppose that any Attenuants whatever can possibly act on any other Concretions in the Body. May I doubt whether there ever was a Stone dissolved in the Bladder by

any Medicine whatever. We have often seen several hundred pounds of Soft Spring water taken to no purpose in Cases of Stone, for altho' Relief has been obtained yet dissections have shewed us the Stone increasing & Bladder as large as ever.

It is hard to tell when a Morbid Tenacity takes place in the Fluids. It occurs only in those Cases where all ye Functions are obstructed as in ye Jaundice. Between here Inspissating Medicines can do nothing. the Cure of it must be attempted by Vacuations, & by such Aliment as evolve but little saline Matter, Diffuse a great deal of viscid Nourishment. all Vegetables are of this Nature & hence their usefulness in the Jaundice. how far are Fish, the Amphibia, and young Flesh disposed to evolve saline Matter? are they less so than other Animal Substances? I leave this Question to ye Investigation.

Demulcents are such Medicines as render Acrimony innocent without destroying it: This Indication is answered 1st By Diffusion. 2nd By Envisceating & covering Acrimony. the most corrosive Acids we see are rendered inactive by being mixed with a little Oil. all Demulcent Medicines are 1st Water. 2d Mucilage & 3d Oil. 1st Water not only diffuses but carries off Acrimony from the Fluids. – I have read Instances of the venereal Disease being cured by a plentiful use of Water, but I am very doubtful of its virtues in Specific Acrimony

2d Mucilages are much altered by the

assimilating powers, & therefore seldom enter the Blood so as to produce any effects there. Vegetables especially of a bland viscid nature evolve their saline matter but slowly & therefore may tend to obtund acrimony in ye Blood in a small degree.

3:rd Oil. this never appears formally in the Blood, nor can it act as an oily demulcent in the Body. By evolving its saline matters slowly it may tend to give the Liquids of a denser Consistence. the Oil deposited in ye cellular membrane is designed only to be absorbed in Fever, when the tendency of the Fluids is to an acrid state. I have no great Dependence upon it as a demulcent.

Zij of bil taken in Exx in homo Jamaica can do but little in Catarrhal and Defluxions, however much Physicians depend upon it.

It is hard to condescend upon particular Acrimonies. Vegetables form a great part of our Diet, & these are disposed to Acidity from ye nature & from the Operation of the Stomach upon them, but the System is provided wth powers of Obviating it. Neither have we any Reason to suppose an Alkaline Acrimony ever present except in stagnating Fluids. I shall therefore pass over every thing y^t relates to particular Acrimonies, & proceed to speak of ye 2nd thing proposed by: of evacuating Humors from the Body.

2° Evacuare
A Humorem Unicum nimiu.

Evacuations may be brought on

1 By a greater Quantity of Fluids being determined to a particular Organ.
2nd By the Fluids being more or less prepared to pass off by a particular Function.
3rd By exciting the Action of ye Secretory or Excretory Vessels.

1st The Determination of a greater Quantity of Fluids may be brought on by
1st increasing the Impetus of ye Blood
& 2nd by increasing its Quantity. Secretions are seldom encreased by y first.

I know of none but Perspiration w^h are encreased by ye velocity of ye Blood being encreased. The second the place w^h Regard to any function in the System. They are always encreased in proportion to ye Quantity of both Fluids to them w^h is always keeping in order to bring about ye encreased Function we wish for.

2nd Secretions are encreased by ye Fluids being better prepared to pass off by the Secretory Organs. This hard to speak confidently here. we know too little of Secretions to be able to induce Changes in their Natures. Water encreases ye function of Urine & Perspiration

by altering their qualities, but wn: any substances wch: induce a change on ye: nature of the saliva - mucus bile? ——

3: By exciting the action of particular secretions. this is to be done

1st: By inducing such a condition of the system wch: excites the action of secretory organs.

2nd: By exciting the action of muscular parts wch: press on secretory organs

3rd: by stimulating substances applied to the secretory organs themselves.

1: this takes place in ye secretion of milk wch: is brought on in an increased quantity

by a particular state of ye Uterus. Bile too is encreased by Anger & Urine by other Passions of ye Mind. This Manner of exciting ye functions is seldom in our power, nor can it be reduced to certain Rules.

2nd Muscular Fibres altho' they lie contiguous to Glands are ~~to~~ not so easily excited as we could wish. ye Quantity of Saliva is indeed encreased by Mandication. perhaps the Operation of Purges depends too only by their encreasing the Peristaltic Motion of ye Guts in w^h ~~cause~~ causes them to pour out

a greater Quantity of the Liquor secreted by the Glands of the Intestines.

3d The most powerful Method of exciting the functions is by applying stimulating substances to the secretory Organs. & of this we shall speak chiefly. But this does not imply that there are such things as specific stimuli. Altho' there may appear to be some foundation for this Opinion. For 1st Anatomy has not pointed out any different conditions of particular Nerves wch we suppose to be specifically affected. 2nd most Acrid substances affect all the Glands alike.

Purging, vomiting & the Diuresis are excited by different Medicines only in Consequence of their being applied more or less primarily or in greater or less Quantities.

I shall begin w: the secretions of Mucus. this you know abounds all over the System but more especially in the Mouth & Fauces & Bronchia. Errhines therefore are indicated in all Cases of Obstructed Mucus the worst Inflammation as well as in all Congestions of the neighboring parts such as in the Head Ach. Tooth Ach &c — Ophthalmia — Gutta Serena, Deafness

It will in Comatose & paralytic Disorders. The means of exciting urinary are 1st warm fomentation or the steams of warm water especially in the various cases of Angina. 2nd By all the variety of acid substances which increase functions especially those which are most heretofore & are least liable to bring on inflamn.

In obstinate Head. Ach. Amaurosis the most violent Urhines may be used, for by increasing the quantity of the discharge, we obviate any bad effects of their stimulus.

L

We know of no specific Expectorants. those medicines wh. prove Expectorants are of such a nature as to stimulate the Stomach Guts & Kidneys, & upon this acct. we are often disappointed of our intentions in giving them. the Discharge of the medicines by vomiting or stool may be obviated by giving them in proper Doses & at proper Intervals. Tobacco when dried & boiled loses its vomiting & by longer drying its purgative qualities & at last becomes Diuretic & Expectorant.

This secretion viz: of saliva may be excited by an internal as well as external medicines. Mercury is the only medicine that answers this purpose. I shall therefore briefly enquire into its Modus Operandi.

It is supposed by some y: Mercury acted upon ye body chiefly from its weight. But this is a wrong supposition. It affects the most general proposition in Philosophy w: is that y: Quality of Bodies are never changed by mechanical means, & therefore do not act mechanically upon Animals. If Mercury acted from its weight

its Effects would always bear some Relation to its Fire, but this is not the Case, for we find it proves more deobstruent the Lower it is made, nor do we ever find it in the Blood formally present. Its Combination wth Salts greatly alters its Operation. the more Acid we add to it the more we diminish its Gravity, but wth this, we increase its Virulence in acting upon ye Body, neither do ye dulcine Preparations of ☿ attenuate the Blood, but on the contrary rather coagulate it, wch shows that ye Salt rather than y^e ☿ acts upon it. Besides the Blood is never dissolved by ☿. It is never

introduced in sufficient Quantity for this purpose. I have often seen Blood drawn from Persons under a salivation w: its ordinary healthy Appearance & sometimes w: inflam: Crust.

2: What determines Mercury to act upon y: Salivary Glands? It does not act specifically upon them 1 from the Arguments we formerly used ag: Specific Stimuli. 2: from its acting upon all the Secretions as well as the Salivary such as y Gutts Kidney Urine. nay we often find it acting upon these when the Glands secreting

saliva are not in the least affected.
- Mercury appears to be disposed
to associate w^th: the matter of ye saliva.
- Can therefore we see are disposed
to unite wth ye matter of the urine in
the same manner. The saliva ab-
ounds w^th: an Ammoniacal salts
& hence we observe the salivary
glands chiefly affected in ye scurvy.
May not y^e ☿ have a Relation
to this ammoniacal salt of the
saliva & may not this be the
Reason why the salivary Glands
are affected in a manner analogous
to the Lesation in a salivation?

the Ammoniacal Salt we see when added to water makes it dissolve a double Quantity of Corrosive Sublimate & w: shows the Relation they have to one Another.

Euphorbium Mineral acts as a Sialagogue merely by stimulat: the salivary Glands in its passage into y Stomach. In w: Cases is Salivation indicated? In all Cases where we wond wish to induce an entire Change in the Fluids, or to evacuate Lerimony from the Serum of the Blood in w: it has its Seat. I do not imagine that it acts as an Antidote upon any Lerimony especially the venereal

Ceremony. for 1st we have no Analogy of it, nor Reason to believe it by Reasonings a priori 2nd we never find it cures the venr Disease the worst exciting a plentiful Evacuation.
3rd the more stimulating we render it, the more successfully we use it. hence the superior usefulness of Solution of Corrosive Sublimate.
4th Many substances wch we know act only as Evacuants cure the venr Disease such as ye Guajacum & many American Plants lately found out by the Indians.

Approving this Evacuation

the only way of the ☿ operating
when is salivation to be ordered?
I do not think it absolutely necessary
at any time. It exposes the Patient
to many ~~be~~ Inconveniences. I have
seen it performed in an equally short
time by other Evacuations. However
when salivation can be used ~~too~~
safely, I see no Disadvantage in it. It
may always be at ye Option of the
Physician.

Q: Preparations of ☿ are best?
The mild Ones. hence a Latt
Author has proposed applying it only
in the Form of Unction. From experience
I can recommend ye method. —

Diuretica

In w^h cases are diuretics indicated?

1st When the blood abounds wth saline matter as in the Dropsy &c: depends upon ye Presence of ye salts in ye blood wch usually passes off by the kidneys. Vegetables are ye best diuretics for this purpose.

2nd: When water predominates in the System. I have often said the blood could not contain an extraordinary quantity of water. but these are still useful when water is stagnating or has been congested as in the Dropsy in which a

uanty function of Urine takes place, & w: perhaps originally occasioned the Disease. But how do Diuretics operate in Dropsies? - there is a Correspondence between secretion & Absorption, & by promoting a watery secretion we excite the Action of Absorption. in w^h manner no One has yet said. but we are sure of the Fact. I have seen vomiting when continued for 24 hours cure an Anasarca.

3rd Diuretics are indicated when the Urine is suppressed or when the

Urinary passages are obstructed, unless the obstruction is of long continuance or very much lessened. These are the chief cases in wch Diuretics are indicated. Dr Boerhaave says they are useful after Concoction is finished in acute Diseases, but this is a Doctrine I know Nothing about.

a Diuresis is brought on 1st By filling the Body wth watery Fluids.

2nd By diminishing Perspiration wch we know carries off ye more fluid parts of the Blood.

3rd By inducing a sudden Constriction of the urinary Secretories. Cold

contracts the Urinary Organs wch excites
them in such a manner as to bring
on an increased function of Urine.
The best way of applying Cold is to y^e^
Extremities especially ye Feet.
2dly: By the Medicines wch are called
Diuretic. These are Saline Matters
by uniting wth ye Serosity of our
Blood is more immediately disposed
to pass off thro' the Kidneys. The
Acids are the least powerful Diuretics
the Muriatic wch is the most volatile
of any of ye Mineral Acids is the most
Diuretic of any except the Vegeta-
ble. Alkaline Salts and more

diuretic than the Acids especially the
Acid Alkalies. Neutral Salts act
as Diuretics & are not liable to
be changed in the Stomach. They
may be given in larger Quantities than
any of the Other Salts. I believe no
substance acts as a Diuretic but such
as contain more or less of saline
matter. all from Vegetables which act
as Diuretics are of an acid volatile
nature.

I know of no Indication that it is
more difficult to answer than the One
we have been speaking off, as all
Diuretics have likewise the power

of stimulating the Stomach & Intestines.
we must therefore to render them
Diuretic either diminish their bole:
ity or give them in small Doses.
They are apt to be so diffused that it
is necessary to give them pretty strong.
have the use of Colchicum. Does
Combining Diuretics with Sedatives
Medicines make them answer the
better? — I cannot say it does
from my own Experience: —

In wh Cases are Diaphoretics indica-
ted 1st: when Perspiration is Obstru
but it is hard to tell when this
takes place, or wh: Diseases it induces.
They are generally given in Catarrhs
Colds &c: But we have no proofs of
their depending on any acrid matter
being retained in the Body. I believe
they do Service chiefly by bringing on a
proper Determination to the Skin.
2nd When an Acrimony prevails in
the System. Acrimonies are mostly
discharged by the Skin. This by Exan-
themata sufficiently prove. I believe

the venereal Disease might be cured by plentiful sweating. Diaphoretics are useful in all these Cases ~~as~~ of Lues in many where we see ye animosity better disposed to pass by ye Skin.

2^ly^: When water abounds in ye System. But they are not so safe as the Diuretics in these Cases tho' they operate in ye same way.

3^ly^: when ye Balance of ye System has been changed or when ye Determination to the Skin has been obstructed. this is the Case in all Fevers, & hence ye use of Diaphoretics in febrile Diseases.

But Diaphoretics should be used with
great Caution here. the Skin often re-
mains long dry after ye Exhibition of them,
& the Fever after the most profuse
sweating.

5th: When the Action of the System is
torpid. this happens in some Fevers
& in many comatose & paralytic
Diseases where we are sure there is
no Congestion in the Brain.

The Diaphoretic Medicines are
1st: water taken in large Quantities
2nd Perspiration & Sweat in any heated
Air all the various means of exciting
the Sanguiferous System such as Exercise

internal stimuli w: act only upon y: Stomach & not directly on y Heart & Arteries.

2d By exciting a Determination to y Skin. Heat joined w: moisture assist this Indication best. Cold likewise answers this Intention as also Frictions.

3 By various Matters acting on the Body so as to relax the Surface of the Skin. Opium & all sedative Medicines act in this way. those Substances likewise w: act on y Stomach prove diaphoretic such as cold water Neutral Salts w: are sedative & Refrigerant. Mercurius act in y same way.

II In Morbis Fluidorum Indicationes Curatoriae sunt

2do A. Sanguinem ~~per~~ evacuare per Emenagoga.

The Uterus is evolved about Puberty. the Manner of it you will easily understand from w. was said under the Head of Nutrition concerning the Doctrine of Evolution in general. the Depletion of the uterine vessels leaves them relaxed w. ~~p~~ disposes them to pour forth blood again after a certain time has been allowed for its Accumulation. this obliges us to embrace the Doctrine of a partial Plethora

which indeed infers likewise the Presence of a general Plethora which goes no further than to give an exact Fullness & proper Degree of Tension to the Whole System. Why does not Abstinence check the Flow of the Menses?

Because their Flow does not depend upon an Absolute Quantity of Blood in the System, but upon a Relative Quantity, & therefore when Blood is drawn, the Balance ~~of the Syst~~ between the Uterus & the rest of the System is still kept up.

But again whenever Blood is evacuated, there we see a Plethora

most apt to happen. Men know who are subject to a Bleeding of the Nose are troubled wth Congestions of Blood in their Heads. in ye same manner the Uterus from having long discharged Blood gets a Habit of accumulating it w^th: no Abstraction can destroy. But further the Discharge of the Menses is an Act: not a passive Vacuation. When ye Uterine Vessels are filled w^th: Blood their Action is encreased by ye stimulus of the Blood w^th: excites them to discharge it. this you see connects it w^th: ye Nervous System, & Act^n in some measure for its being periodical. –

Emmenagogues are indicated when this Flux is preternatural & hurtful in such Cases only. Pathologists divide Obstructions of ye Menses into 1st Emancipatio Menstruum ie when the Menses have never yet flowed. 2d Obstructed Menses ie when they have been suppressed. Many Causes concur in bringing on both these Cases of suppression. — they may all be reduced to 1st Want of Impulse in the Blood in ye Uterine Vessels. 2d a Torpor in the Uterine Vessels which renders them insensible to the

Stimulus of the Blood, or 3rd: to an increased Resistance in ye Uterus. 1st The want of Impulse in ye Blood may depend upon a want of Aliment or weak assimilating powers, or plentiful Evacuations. Yet these Causes Operate but rarely. The Chlorosis may depend upon this Cause or rather upon the 2nd viz: a Torpor of the Uterine Vessels. The 3rd: viz: Resistance in the Uterus may be congenial, or arise from Obstruction by which I mean a difficult transmission of Blood from a Fault in the Blood itself, or from a

Constriction w: is seated in y simple or moving Fibres. I believe the Menses are never obstructed from a Fault in the Blood, but by Constriction always when they are checked from incidental Causes.

The Means of promoting the Menses are 1: By restoring the Quantity of Blood by Aliment or strengthening the Spinal powers. 2nd By encreasing the powers of y System in general by the Quality & Quantity of particular Foods —

Exercise & Cold Bathing. the
Application of Heat especially in the
Winter Season has been known to
bring down the Menses. the power
of Electricity has done great service
in Obstructions of the Menses. its
Stimulus is confined chiefly to the
Nervous system, & seldom acts
upon the Languiferous System. tonic
Medicines such as Chalybiates Barbe
are of great Service in these Cases. y.
more purely Stimulating Medicines
do Service likewise. Mercury in
particular has often been em-
ployed with Advantage in restoring the

Menstrual Flux. I have some times seen Vomiting restore the Menses. how does it act? either by stimulating the whole System or by relaxing the Uterine Vessels from stimulating the Stomach.

3d. The Menses are restored by determining the Blood to y Uterus. Blood-Letting has long been used for this purpose from y Notion of Revulsion. but of this we shall speak directly. Compressing the Illiacs has been employed to determine the Blood into y Uterine Vessels, but I cannot say I have

Often seen it used w.th much in some Cases of Obstructed Menses from Obstinate Causes it may do Mischief by throwing the Blood into the Aorta &c. Purges are useful to answer this Indication. the Lower Extremities sh.d be excited by means of Friction w.ch brings on a Determination of Blood towards the Uterus. Bathing the Lower Extremities has been much recommended, & I believe it is a most useful Remedy to derive to y.e Uterus. It rarefies the Fluids & thus disposes to Hæmorrhage &c. 1.st By exciting the Action of the

plenine Defects. the most powerful
method of doing this is by the
use of Venery. I refer you to the
Devices to Determine when this Re=
medy must be recommended. 2.nd by
applying stimulat. substances to the
vagina. they never enter the Cavity
of the Uterus. I have no great de=
pendence on them. they cannot act
by their Heat, for nothing warmer
than Uterus itself can be introduced into it
so as to relax it.
3.d Specific stimuli have been propo=
sed to the Uterus. the fetid Gums
of Plants have been supposed to

act in this way, but I would choose to refer their Operation to their Antispasmodic virtues. Roes knows Emmenagogue either by disposing the Blood to Hæmorrhage wch. I much doubt except it is from y. Hæmorrhoidal Vessels, & this it wd. do from the passing unchanged thro y. small Guts, or it may move Emmenagogue from stimulating the Rectum wch. we know is connected wth. the Uterus, or lastly it may act merely as a Purge.

4th. Warm Bathing is calculated

to answer this Indication when used in the Form of ye Lenimentum. it acts by taking off ye Resistance in the Uterus. its Virtues then are chiefly Antispasmodic.

Much Study & Attention has been
bestowed upon this Evacuation at all
times by Physicians. Many Disputes
have been agitated concerning it wch
indeed is a Reproach to our Dogmatic
Plan of Physic. But this depends
upon our appealing so much to
Experience wch is liable to such
great Fallacy, so that this throws
the Reproach upon Empiricism. I
shall avoid entering into the Dis-
putes concerning Blood-Letting, &
deliver you in a few words my
Sentiments upon it. 1st then Blood.

Letting acts merely as an Evacuant & therefore its Effects will be Relative to the Quantity of the Blood in the Body. Authors differ about the Quantity of the Fluids in the Body wherein y. e. w: of some of them taking into their computations the fluids w: y. e. solids yield by Chemical Analysis. I shall confine myself only to the circulating Fluids. or those only w: convey red Blood. wing thing drawn by Blood-letting comes only from y. e. red bepels & its Effects will be confined to them, or to that Blood only w: circulates in the larger bepels, for y. e. Blood

circulating in the Serous vessels is beyond the Reach of ye Discharge we Blood-letting occasions. I believe therefore that the Quantity of Blood may be placed below 25 in a Man of 120 weight. But again the Effects of Blood-Letting will be diminished by the Quantity of red Globules drawn off. You see then that Blood-letting will occasion a considerable Depletion in the Arterial System. Some tell us that this Depletion is very transitory from Secretion being decreased, & from liquid Aliment being thrown in to the Body, but then

of these contribute to ye immediate Regeneration of Blood. the last passes off immediately by urine or Perspiration. the Coagulable Lymph & Red Globules require a solid Aliment to reproduce them, & this we know is seldom given in those Cases, in wch Blood. Letting is indicated or ordered. all this goes tends to show that ye Quantity of Blood drawn is much greater wch Regard to the Rest of the System than has been supposed.

The Effects then of Blood Letting are wn 1: a Diminution of the Tension of ye Blood. vessels wch I told you before

depends upon a certain Degree of Fullness of these Vessels. The Tension of the Muscular Fibres & by Excitement of the Sensorium you will naturally see is closely connected with & Fullness of the Blood-Vessels, as their Action depend upon a free Influx of Blood into them. a Debility then & some Degree of Atonia must always succeed a Loss of Blood. If the tonic power is too much increased from any Cause Blood Letting will remove it. hence its great Use in Cases of Inflammat. & Diathesis.

The vessels are always in a stretched state; & this will acc^t for Dr Haller's Experiment in w^h he found upon puncturing an Artery in a living animal that the Blood had a retrogade motion in both Arteries & veins towards the Open Orifice. It depends upon the stretching powers being taken off, & the vessels reacting on the Blood, w^h causes it to tend towards that Part where the Tension is removed i.e. the Orifice.

This Doctrine overthrows the Notion of Revulsion as the Balance as of the Lystem will be restored immediately

after Bleeding. The Doctrine of Revulsion first took its Rise from Physicians supposing the Arteries were rigid Canals, but later Experiments have taught us ye contrary. I conclude then y^t Blood-Letting acts only by Depletion. But this Depletion will always be more immediate & more conspicuous in particular parts than over the whole System & hence the use & Foundation of topical Bleeding. thus in an Opthalmia arising from use of Eye half the Quantity of Blood will do more service than three times ye Quantity taken from the Arm, unless it

depends upon a general Inflam.y Diathesis of the whole System, or has induced such an Inflam.y Diathesis.

2.nd Other Circumstances attend Blood-Letting besides Depletion. In Cases of very great pain we often see Zi of Blood afford immediate Relief. This depends upon y.e Tension of the System being very exquisite, & uniformly communicated thro' all its parts, ~~&~~ w.ch makes it sensible to the least Relaxing as well as Absolute Depletion. This Relief will be greater according to y.e Rule of the Stream ~~of~~ in w.ch it flows.

3d. Blood Letting will have Effects according to the Number of Muscles in Action wch. tend to keep up the Irritability of the System. hence the Foundation of Bleeding in a recumbent Posture. The reason we are to lying on our Backs. the Muscles at - & the Slower the Pulse. The Symptoms wch follow Bleeding depend upon a Relaxation induced in the Arteries wch is communicated to the whole System. I have seen a hail young Fellow fall into a Syncope upon having a tooth Extracted about the size of a Pistole of the small Pox opened in his Forehead.

you will be easily led to apply
w^h has been said to arterial^l^y topical
bleeding. —

Blisters have been supposed to have a very extensive Operation from a notion wh. has prevailed of Cantharides entering the Blood & defiling it. But I deny their having any Effects upon the Blood. for 1st they are never used in suffic.t Quantities for this purpose. 2nd They act not only by Revulsing but they likewise excite Inflam.n wh. the Foundation of their Blistering so that Blisters are both Revulsents & Stimulants. the Effects of Blisters will vary according to the Difference of the Constitution they are employed in.

When there is little irritability they excite no Inflammation nor even quicken the Pulse. In Constitutions of a contrary Temperament they from stimulating quicken the pulse. They relieve an Inflammation in a particular part by bringing on an Effusion of Serum towards which the Inflammation itself direct naturally tend. This shows you their usefulness in Rheumatism. By this topical evacuation it often takes off a morbid Fluid from the whole System. But their effects are always the more considerable the nearer they are applied to a

particular part. But still I think the Tension of the Whole Surface of the Skin may be greatly influenced by the Application of Blisters to ~~the whole~~ any Part of the Body.

This is an evacuation of matter in the form of Pus & from late Discharge it appears to be produced from Gum, very strongly impregnated w: the Coagulable Lymph. The Discharge then from Issues may be considered as nearly pure Coagulable Lymph, & comes directly from the Sanguiferous System. Its Effects therefore are more considerable w: Regard to the System than we would suppose from the Quantity discharged; they draw off the Lymph faster than it is supplied by Aliment. —

But again Issues always keep up a topical Inflammn: for there can be no Suppuration without some Inflammn.

By this Operation they Obviate: without Inflammn: & hence their useful: in the Phthisis Pulmonalis. If the Body is affected with an Inflammy: Diathesis while an Issue runs the Inflammy: Determin: is towards the Issue, & thus prevents internal Inflammations. —

This is a very large & intricate subject.
I shall first consider ~~its~~ their general Effects;
which will inform you to apply ~~it~~ them in
particular Diseases

1: They evacuate the Contents of ye Stomach.
They often Operate in this Manner,
when extraneous Matters are introduced
there, or morbific Matter formed there
by Error in Digestion or Other Causes.
Too much Stress has been laid upon
the Evacuating Effects of Vomits from a
want of knowledge the process of Digestion
& the Nature of the Fluids in ye Stomach.

Vomits

2nd: Vomiting derives many Fluids into the Stomach wch were not there till the Vomit was given, & even goes so far as to ~~[illegible]~~ invert the peristaltic motion of the Guts insomuch yt: ye pancreatic Juice & Bile are often thrown up by Vomiting. this leads us to view Vomiting in a more extensive manner yt: we have hitherto done. I once knew a Practitioner of Physic who used no other method of curing Dropsy but by ye frequent Exhibition of Vomits.

3rd: Vomiting in Consequence of bringing the Fluids of the Guts into the Stomach generally acts as a Purge — perhaps the Discharge

of some part of ye vomit on the Pylorus may contribute to bring on the Purging.

4: In vomiting the Contraction of the Diaphragm & Abdominal muscles compresses the abdominal viscera by wch means the Course of the Blood is variously interrupted & relaxed. they act likewise as a stimulus to all ye viscera & operate on ye Liver. Kidneys. Urine &c. the Liver in particular is very liable to a retarded Circulation & a stagnation of Blood. no Medicines are capable of reaching it. Vomitings there acts immediately upon it. & therefore shd be used very freely in Diseases of the Liver. great Caution

sh.d be used in diseases of the Kidneys especially
in cases of stone when they are very large.
In Obstructions of the menses the Compression
excited by vomiting excites the vessels of the
uterus & thus often brings on a flow of
the menses. In uterine Hemorrhages
they have likewise been employed with success
but I shall say no more in this manner.
5th They operate on the Thorax & promote
a freer Circulation of the blood thro' the
lungs. they cause the mucous glands
to secrete plentifully & thus prove very
most useful expectorants.
6th They relieve Congestions ~~of the~~ in the
Head in particular cases. But here
they sh.d be used only at a certain period

of Life & under very particular Restrictions.

7.th They quicken the Circulation all over the System & thus prove very powerful Sudorifics in Fevers & other Diseases when Sweating is necessary.

8.th Vomiting is always attended w.th that Anxiety we call Sickness w.ch has very different Effects upon the System from any thing we have said. These Effects depend upon the wonderful Connexion w.ch is established between the Stomach & the Rest of the System. —

Vobis

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